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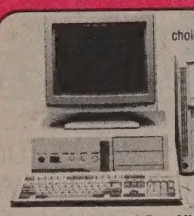

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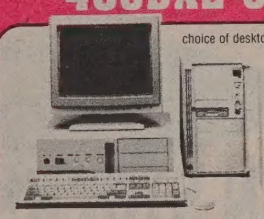

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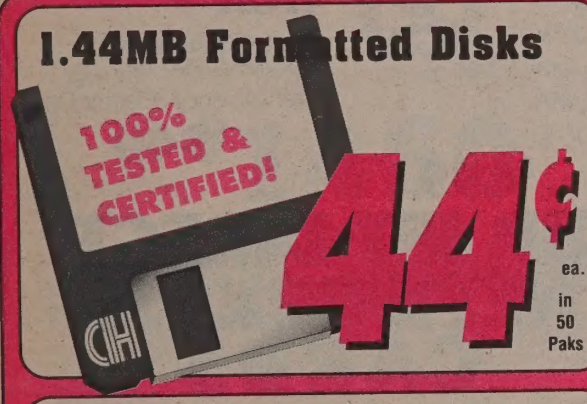

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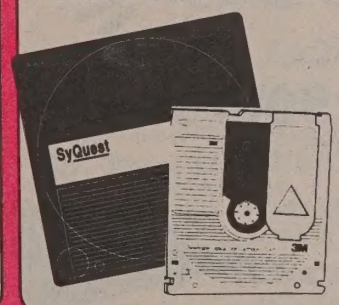

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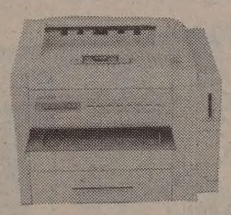

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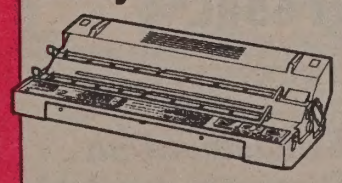

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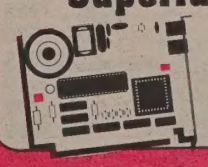

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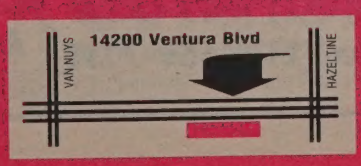

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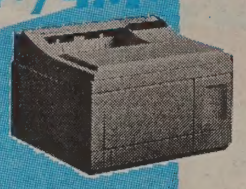

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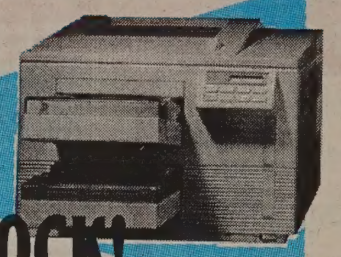

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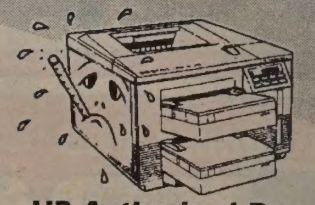

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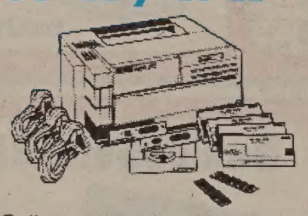

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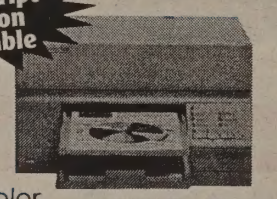

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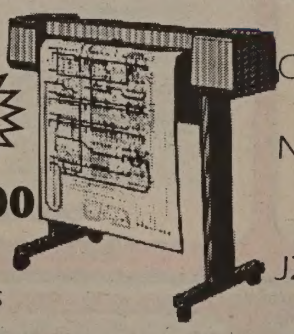

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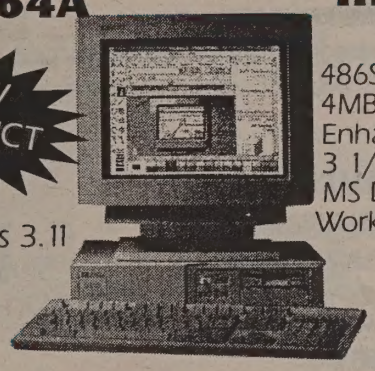

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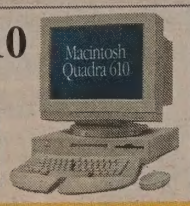

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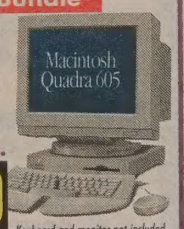

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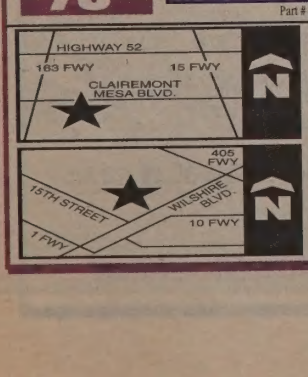

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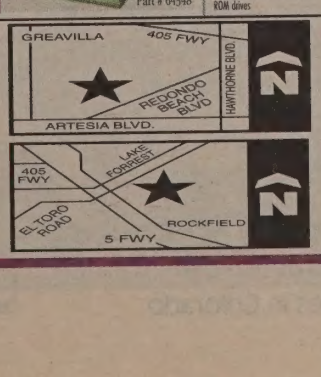

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Contributors MICROTIMES™

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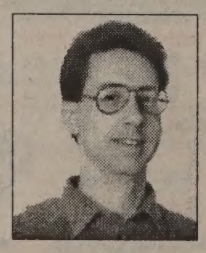

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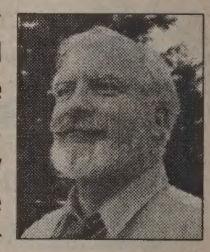

Jim Warren organized and chaired the First Conference on Computers, Freedom & Privacy (1991), received the Electronic Frontier Foundation Pioneer Award in its first year (1992), led the recent successful effort to make state legislation and statutes available via the public nets without state charge, and received the James Madison Freedom-of-Information Award from the Society of Professional Journalists—Northern California (1994). He also serves on Autodesk's board of directors.

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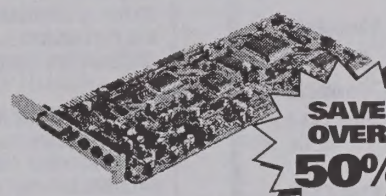

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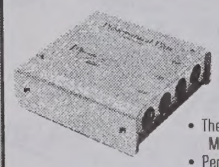

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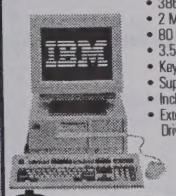

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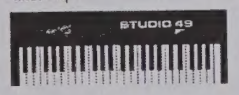

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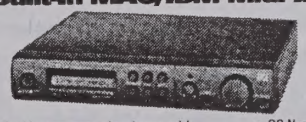

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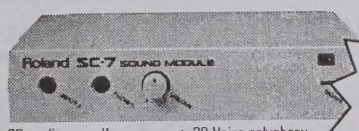

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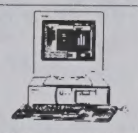

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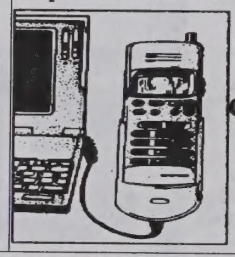

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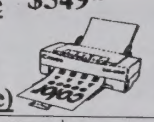

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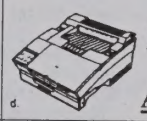

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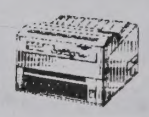

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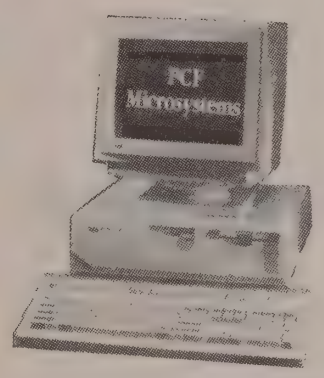

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BY PAUL HOFFMAN

Industry Insight

Microsoft Struggling With Defining Features For Windows 4, NT 3.5

As most people expected, Microsoft is going to miss its self-imposed June deadline for shipping Windows NT 3.5 due to bugs in the beta test versions. At the same time, Microsoft is also committing to ship Windows 4 by the end of this year even though the first beta test copies, due out in June or early July, won't contain all of the basic features. This has left many users doubting Microsoft's ability to deliver the product in time without significant bugs. If the past is any indication of the present, Microsoft will choose to ship a solid version late.

Of course, of the two operating systems, Windows 4 is much more important than Windows NT 3.5. NT has had a lukewarm reception by businesses, and has been mostly relegated to being used as a file server only. Even Microsoft hasn't produced any significant applications for NT, although it is widely expected that there will be NT-specific versions of Excel and Word after V3.5 is released. These new versions could take advantage of the things that Microsoft has been touting NT for, although if they do not really shine, it will be another indication of how little individual users need NT.

NT was to be released this month, but after the results of the first full beta test, Microsoft will have to delay the release in order to conduct a second round of testing. The bugs in the first round showed up in everything from networking to compatibility with Windows 3.1 programs. According to reports, another problem with the first beta test was that Microsoft shipped significantly fewer copies than expected, and thus did not have as much confidence in the results. The second round of testing should go to a significantly larger audience.

The fate of Windows 4 (which some people still insist on calling "Chicago" as if its codename means anything anymore) is more problematic. Microsoft continues to change the user interface and the list of major features that the program will have, making more people worried that they cannot release a stable product by the end of the year. Although a great deal of in-house testing is being done on the product, it isn't ready to be released even for its first beta test because major functions have not been finished. It is likely that Microsoft will release a version and call it "Beta 1" even though it won't be a real beta version since it will not have all the important features.

For example, a major feature that is currently unfinished is the electronic mail client that Microsoft promised for Windows 4. Currently named InfoCenter, this all-in-one program will let users collect electronic mail and messages from a wide variety of sources and view them using a single interface. Although some other programs perform this daunting task, they are often expensive and need to be set up by experts. Another set of features that may slip from the first beta version, and thus make it not really a beta test but instead an alpha version, relate to peer-to-peer networking of objects. Although Windows for Workgroups does an admirable job of sharing files and simple resources like printers, it cannot share objects such as OLE items over a network. So far, it is not clear how Microsoft will incorporate those into Windows 4.

Microsoft is also having a hard time deciding what the basic user interface for Windows 4 will look like. If you've been looking at the articles in PC-related magazines over the past few months, you've probably noticed that they show different-looking programs. This isn't due to sloppiness on their part: Microsoft has not stopped twiddling with the interface. For example, recent versions of Windows 4 shown by Microsoft have two different ways of viewing the files available to you that depend on whether the files are on your hard drive or on the network. In recent demonstrations, Microsoft has emphasized that the network interface will be made more integral for all users, based on the assumption that a much larger number of Windows users will soon be on a network, even if it is through a modem.

Microsoft is having a hard time deciding what the basic user interface for Windows 4 will look like.

Regardless of how late either operating system is, it will not affect Microsoft that much. Companies that have committed to NT are not about to defect to a competing operating system such as UnixWare over a three-month delay. Similarly, if Windows 4 doesn't appear until May of 1995, no one will stop using Windows: Where else are they going to go? Sure, some may start using OS/2, but few have proven to be that brave, even as OS/2 has become more robust and more reliable than Windows. This is not to say Microsoft is being callous or careless; instead it shows how computer users are affected by what is a virtual monopoly in the operating system market.

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It has long been the dream of many software companies to be on the required software lists of large companies. Only a few programs such as WordPerfect and Lotus 1-2-3 have made these lists of specified software, and they have benefited mightily from the resulting sales. Even these two pieces of software have not been able to rely on these corporate sales, however, as recent changes in the market have shown. Even in the most rigid of companies, renegade departments would buy non-specified software and thus reduce the effectiveness of standardizing.

continued on page 174

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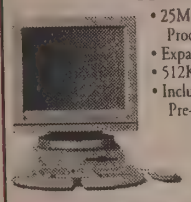

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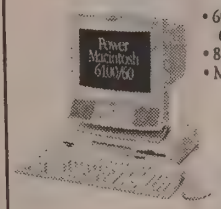

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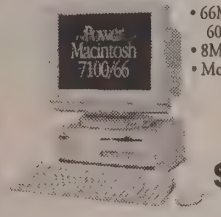

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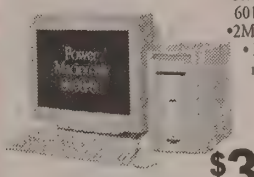

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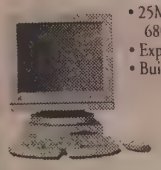

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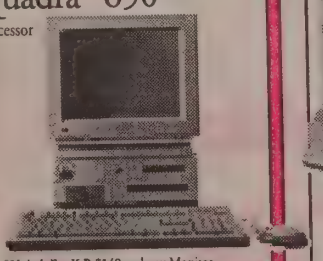

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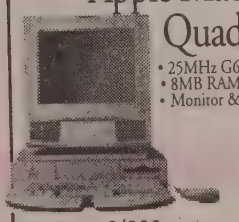

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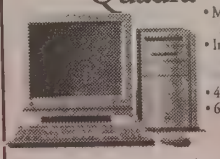

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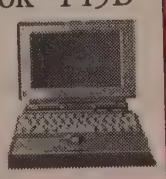

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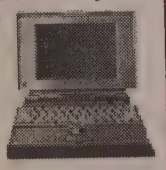

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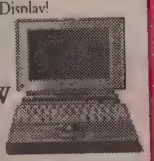

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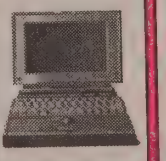

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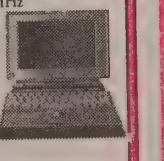

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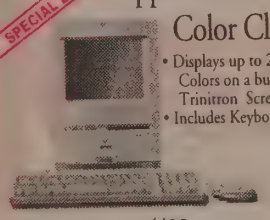

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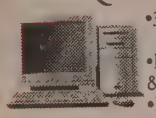

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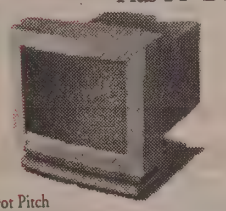
REFURB 8/230	REFURB 8/500	REFURB 8/1000
1889	2149	2579

*Limited Time/Qty.

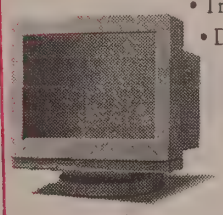
Apple Macintosh® Color Plus 14" Display



- .28 Dot Pitch
- 640x480 resolution

$299

Apple® Multiple Scan™ 17" Display

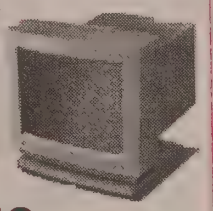


- Trinitron Screen
- Digital Control
- 17" Screen

$949

NEW

Apple® Multiple Scan™ 20" Display



- Trinitron Screen
- Digital Control
- 20" Screen

$1949

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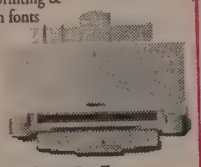

- 360 dots-per-inch quality
- Grayscale printing & 35 built-in fonts

$274

Apple® Color Stylewriter® Pro

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- 64 Scalable Truetype Fonts
- Color Sync color Matching Tech

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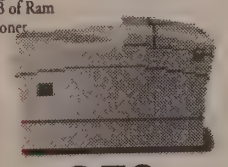
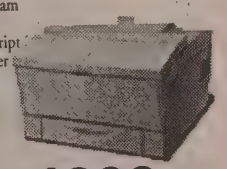
Apple LaserWriter Personal™ 320



- 300DPI
- 4 Pages Per minute
- 2MB of Ram
- w/Toner

$859

New Apple LaserWriter Select™ 360



- 600 Dot per inch
- 10 Pages Per minute
- 7MB Ram
- Adobe Postscript
- w/Toner

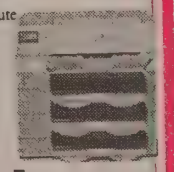
$1399

Apple LaserWriter® Pro 630

- 600 DPI
- 8 Pages per minute
- 8MB Ram
- Adobe Postscript II
- w/Toner

$1899

Apple LaserWriter® Pro 810



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- 64 Scalable Fonts

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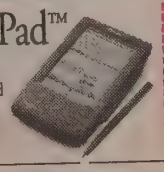

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- Batteries Included

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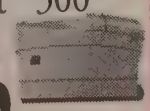

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- 5PPM
- 512K

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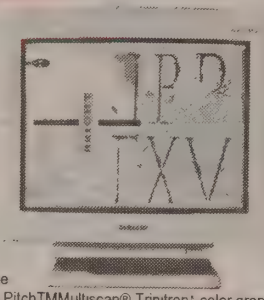

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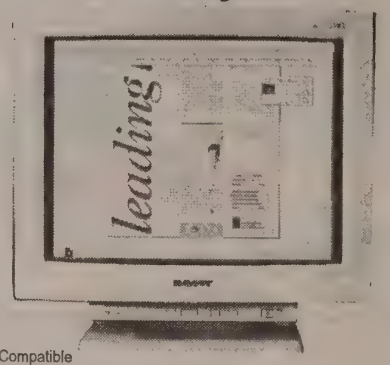

- Mac Compatible
- 20" Super Fine PitchTM Multiscan® Trinitron® color graphics display monitor
- .30mm Aperture Grille pitch
- Maximum resolution of 1280 x 1024 refresh (non-interlaced)
- Variable scan frequency of 30 to 71 kHz
- MRP II

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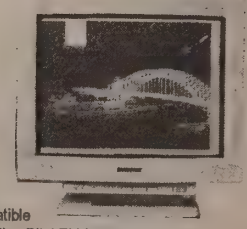
GDM 2038



- Mac Compatible
- 20" Super Fine PitchTM Multiscan® Trinitron® color graphics display monitor
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- Variable scan frequency of 28 to 85 kHz
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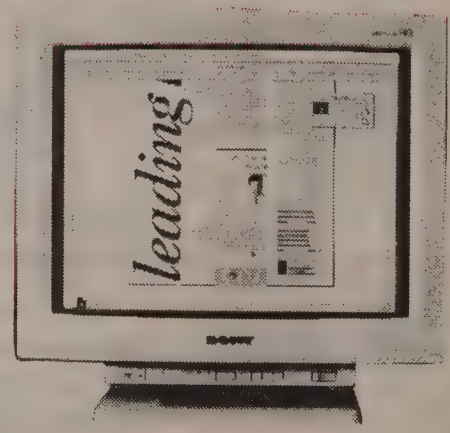
20"



- MAC Compatible
- 20" Super fine Pitch TM Multiscan ® Trinitron ® color graphics display monitor
- 30mm Aperture Greille pitch
- Maximum resolution of 1280x1024 refresh (non-interlaced)
- Variable scan frequency of 30 to 71kHz

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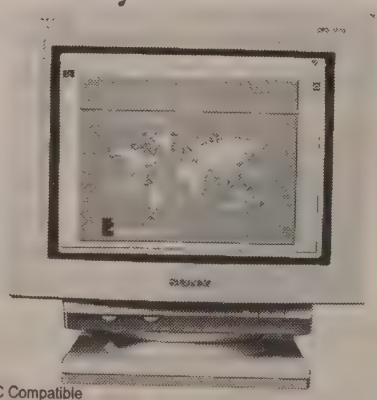
GDM-1936 REFURBISHED

Sony CPD-1320



- MAC Compatible
- 14" Super Fine Pitch™ Trinitron® Multiscan™ monitor
- .25mm Aperture Grille pitch
- Resolution of 640 x 480 (VGA)
- Scan frequency of 31.5 kHz
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Sony CPD-1430

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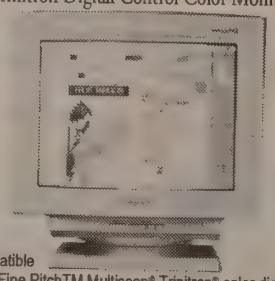

- Mac Compatible
- 14" Super Fine PitchTM Multiscan® Trinitron® color display
- .25mm Aperture Grille pitch
- Maximum resolution of 1024 x 768 at 72 Hz refresh (non-interlaced)
- Variable scan frequency of 28 to 58kHz
- Overscanning for crisp edge-to-edge images
- Sony Display Memory System provides easy-to-use digital control of screen images
- Full compliance with Swedish MPR II standards for VLF/ELF magnetic and electrical emissions

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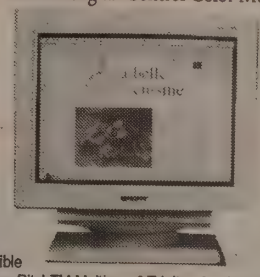
Sony CPD-1730

Trinitron Digital Control Color Monitor



- Mac Compatible
- 17" Super Fine PitchTM Multiscan® Trinitron® color display
- .25mm Aperture Grille pitch
- Maximum resolution of 1024 x 768 at 72 Hz refresh (non-interlaced)
- Variable scan frequency of 28 to 59 kHz
- Overscanning for crisp edge-to-edge images
- Sony Display Memory System provides easy-to-use digital control of screen images
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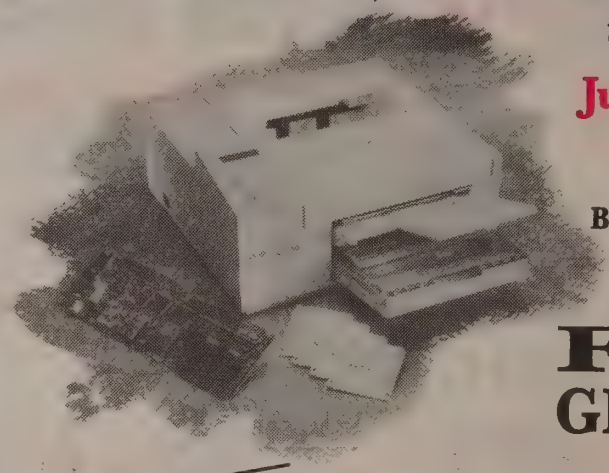

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Utopia Available Now!

But How To Get It?

These columns concern our futures. This one concerns technology and the marketplace—but not exactly as a MicroTimes reader might expect.

This is one of those "Ahah!" insights. I awoke with it about 5:30 one morning in early December of '92. It derived from a meandering afternoon's chat with André Bacard of Mill Valley.

This concerns living—how we are doing it, versus how we could, realistically, do it.

Productivity Outstripped Consumption

Let's face it: No matter how hard we try, we no longer consume as much as we can produce. The most effective propaganda machine in the world—American television plus Madison Avenue's massive marketing manipulations—can no longer goad us into buying enough of the stuff we don't need.

And overproducing employers are downsizing.

We try to build things so they wear out. It is well documented that obsolescence became an overt industrial policy by the mid-'50s, replacing durability and—all too often—also replacing pride of craft. It's working in some cases—razors, diapers, nosewipes, drink containers, pet rocks, newspapers, computers. Our landfills prove it.

But where it really counts—in high-ticket items like cars, refrigerators, and houses—even the most obedient, fully indoctrinated, possession-coveting, Jones-following consumer keeps opting for things that last. And some ignorant twits insist on building such things—all too often in some other nation.

They simply don't understand. Full employment in a market-based economy requires that consumption match productivity.

The Ol' Daze

When I was a kid in the '40s and '50s, we did really weird stuff. Families and friends actually hung out at each other's homes.

We even did things together. Often, we even enjoyed it.

We had friends in those days. We even thought friendships were very important. We actually spent significant time doing things with each other. Just for the fun of it!

Usually, we didn't even go to a bar, resort, or other commercial consumption center. Amazing, huh?

Then in the acid-eatin', dope-smokin', nudie-kook, anti-war hippie '60s—when we thought we'd change the world, even if it took a year or two—many of us still spent massive moments with other humans, although early TV was around.

But then TVA took hold—TeleVision Addiction. (And yes, I'm at least as hooked as most folks—hours of nightly vidiocy in place of time with friends. Of course, it doesn't help that I've isolated myself on a rural 40-acre mountaintop—part of that dream, ya know—a half-hour from everyplace. But that's another story.)

All that was before we received hours of daily video instruction in how many more expensive activities we had to pursue, and how many more things we needed to own than we currently possessed.

Why, in the good ol' days, we could even have less than someone else without feeling poor, abused, or exploited—without picketing and litigating whenever our "rights" and "entitlements" weren't being instantly provided by the government.

Utopia Past

In those quaint mid-century decades, our utopian fantasy was to have a home and family—or at least cozy companions or a cordial commune—and friends and time to spend with them.

> WE TRY to build things so they wear out. It is well documented that obsolescence became an overt industrial policy by the mid-'50s, replacing durability and—all too often—also replacing pride of craft.

But we needed ample food, comfortable shelter, and reasonable transportation, and our individual capacities to produce such things were limited. So most of us had to work most of the time to produce what we, as individuals and as a society, needed for what we were told was "the good life."

Now, mechanization and automation have so greatly empowered us that we, collectively, can—and do—produce far more than we conceivably need.

Now we have the productive capacity to provide ample food, shelter, transportation, and free time, at least for this nation and probably for this hemisphere. That was all we needed for Utopia in the fourth quarter of the twentieth century.

Why Not Utopia, Now?

But our market-based economy—where permission to consume is exclusively a function of personal ability to produce—doesn't work. Fewer and fewer of us can produce all that everyone needs to consume. It's also clear that excessive consumption—unneeded for home, family, and friends—is environmentally dangerous.

Equally dangerous is the propaganda that one must possess ever more, or else be spat upon as a poor, abused, exploited second-class citizen. If I was an ill-educated, permanently unemployable ghetto or barrio resident, daily brainwashed to "know" that I had to have all this stuff if I was to be respected, but unable to earn it—hell, I'd probably be as armed and dangerous as they are.

But few of us have any reason to trust a government-based economy—such as Soviet communism, pre-Thatcher English socialism, or jobs depending on the US Department of Defense.

I don't have the answer. But I do have the question.

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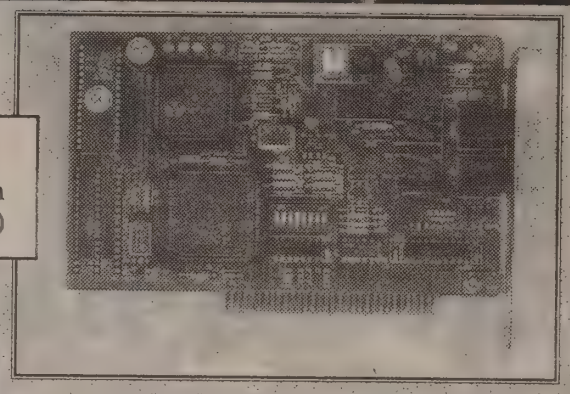

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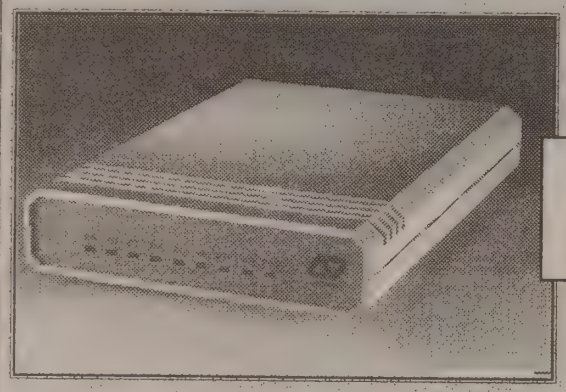

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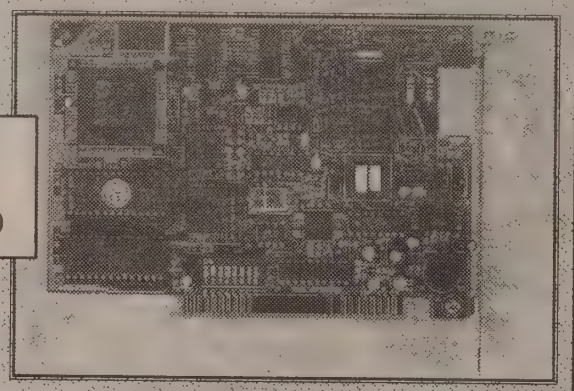

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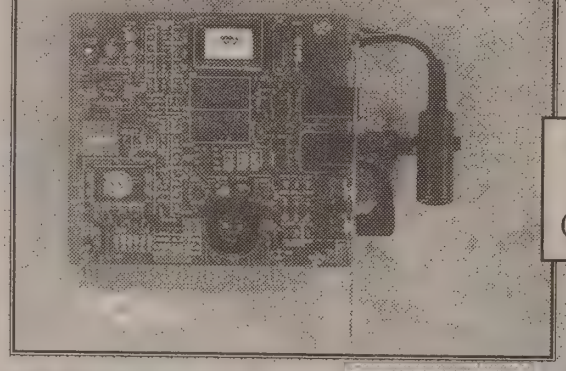

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Given that we can now produce far more than we need, by performing no more than part-time work:

How can we move from a market-based, consumption-based economy and consumption-driven psyche to a national and global well-being for ourselves and our children? How can we return our society to the belief that what is really important is each other? And, at the same time, avoid the functional dictatorship of oppressive bureaucracy and pervasive governmental intervention?

HOW CAN
we move from a market-based, consumption-based economy and consumption-driven psyche to a national and global well-being for ourselves and our children? How can we return our society to the belief that what is really important is each other? And, at the same time, avoid the functional dictatorship of oppressive bureaucracy and pervasive governmental intervention?

Trashing the video indoctrination machine is a needed first step—but I haven't been able to cut myself off from its nightly fix.

And reining in the outrageously arrogant and pompous examples provided by the power-mongers and glory-gluttons in political leadership is a much-needed step. But it is difficult to do (I have found)—most especially without being seduced into their destructive preoccupation with "winning."■

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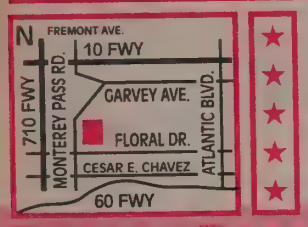

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BY GEORGE GLEASON

Encryption, Pragmatic And Principled

My company does business online. We're in telecommunications: telephony and computer network design, consulting, implementation, and service.

Some of our clients send their telecom service requests (TSRs) via Internet. We also send memos and discuss all manner of proprietary information among ourselves. Lately we've started sending business plans, spreadsheets, and performance reports to our investors and potential investors.

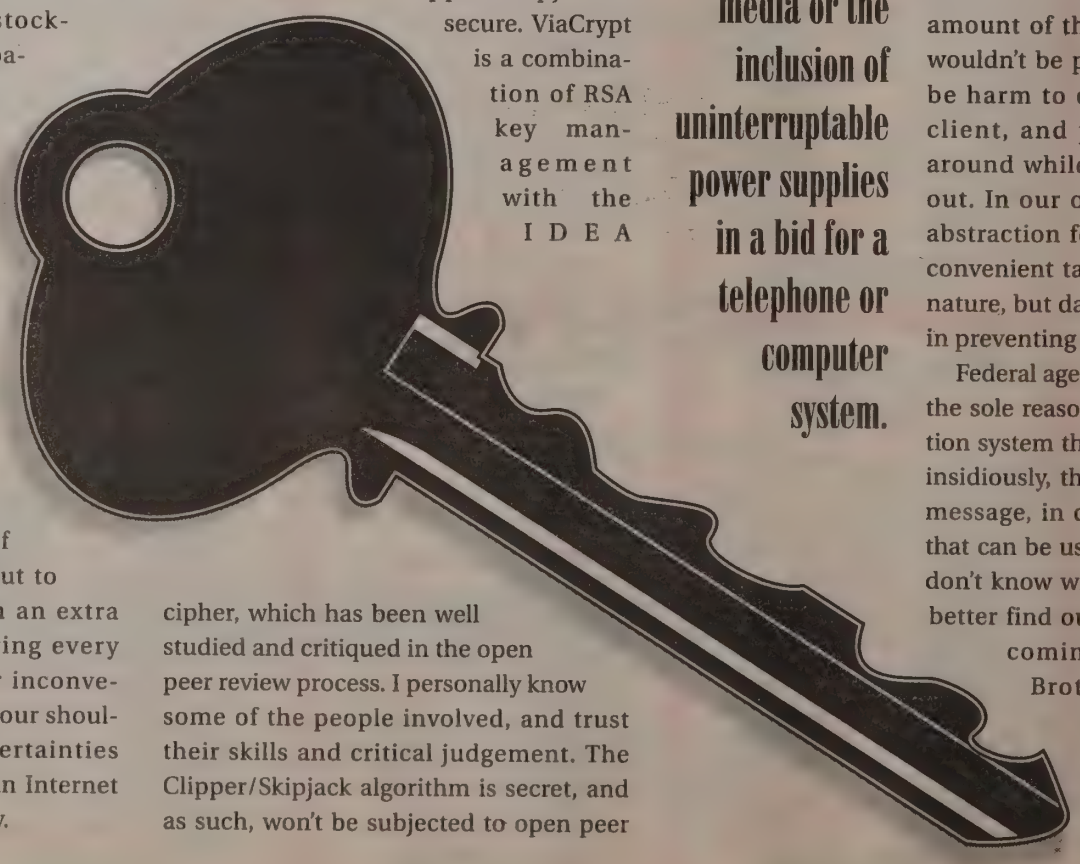
All of this deserves to be encrypted: to protect the privacy of our clients' data about their telephone and computer systems; to protect our proprietary interest in the things we discuss internally; and to protect our soon-to-be-stockholders' interest in our company's profitability and minimal risk exposure.

We believe encryption is needed to meet requirements for "due diligence" in protecting our interests. A misrouted TSR from a client is potentially as risky as a misplaced telephone calling card number. A sales strategy or spreadsheet, lost in cyberspace, is a potential time-bomb in the highly competitive sector of the telecom market we're about to enter. Encryption will mean an extra minute at the keyboard during every email session, but the minor inconvenience will also take a load off our shoulders by eliminating the uncertainties around our email. If I dyslex an Internet address, it won't matter. Finally.

Some time in the next quarter we're going to start using ViaCrypt ("licensed PGP"). Fortunately it's legal to export crypto into Canada, as one of our primary investor/partners is in British Columbia. At some point we may also be doing business with companies in Spain, and therein lies a problem: due to archaic Federal regulations, we can't send them ViaCrypt; they'll have to dig up PGP locally, and we'll need to have a reference copy to instruct them on use.

ViaCrypt Vs. Clipper

We chose our cryptosystem on merit rather than mandate, by which I mean we believe ViaCrypt is secure, and we do not believe the government-promulgated Clipper/Skipjack is secure. ViaCrypt is a combination of RSA key management with the IDEA cipher, which has been well studied and critiqued in the open peer review process. I personally know some of the people involved, and trust their skills and critical judgement. The Clipper/Skipjack algorithm is secret, and as such, won't be subjected to open peer review. The result is a system of questionable merit, which in our estimation is about as trustworthy as an automobile without an oil warning light. It might work most of the time, but when it goes wrong, the failure will be spectacular.



There shouldn't be any controversy surrounding a decision to opt for strong crypto, any more than there is about one's choice of backup storage media or the inclusion of uninterruptable power supplies in a bid for a telephone or computer system.

Now the Federal government wants to certify Clipper as a standard. To sugarcoat the pill, Federal certification could even protect users from liability in the event Clipper is compromised. So for example, if a client sends me a Clippered TSR and organized crime cracks our email server, de-Clips the message, and uses the information to crack the client's PBX for $50,000 worth of calls to Colombia...well, hey, no problem, Uncle Sam says we're not liable. Now if Uncle Sam wanted to go so far as to cover the amount of the actual damages, we still wouldn't be persuaded: there would still be harm to our relationship with our client, and plenty of suffering to go around while the mess is being sorted out. In our opinion, liability is a legal abstraction for pinning blame on some convenient target. Blame doesn't exist in nature, but damage does: we're interested in preventing the actual damage.

Federal agencies are pushing Clipper for the sole reason that they want an encryption system they can break into, and more insidiously, they want one that tags every message, in cleartext, with information that can be used for traffic analysis. If you don't know what traffic analysis is, you'd better find out, because it's the up-and-coming means by which Big Brother will be watching you more than ever before.

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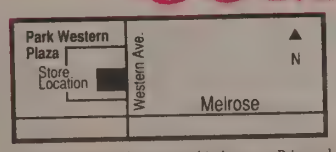

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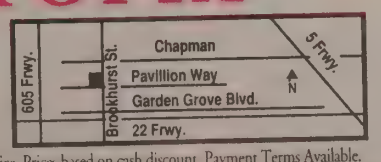

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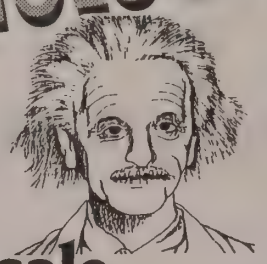

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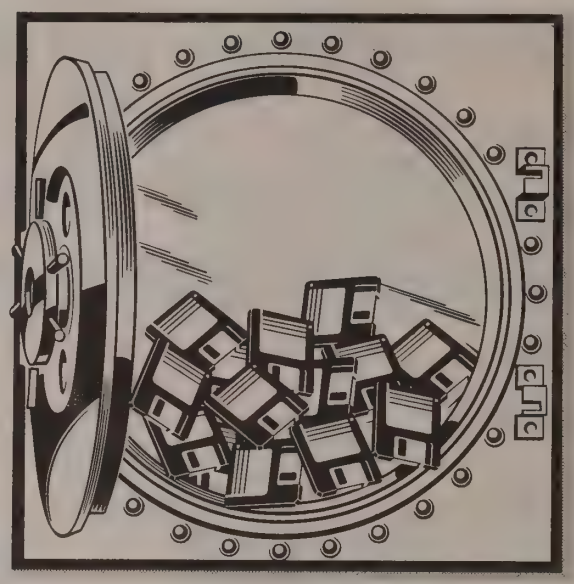

We believe encryption is needed to meet requirements for "due diligence" in protecting our interests. A misrouted TSR from a client is potentially as risky as a misplaced telephone calling card number. A sales strategy or spreadsheet, lost in cyberspace, is a potential time-bomb in the highly competitive sector of the telecom market we're about to enter.

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in place for surveillance of Clipper, there will be a strong incentive to resist admitting it when Clipper is finally compromised; whether by organized crime, rogue elements within law enforcement, or some smart college kid. The result will be a clearly bad standard remaining in place through force of inertia or perhaps through force of law, and a private sector software industry in a poor state of preparedness to come up with a replacement. This is something we do not want any part of.

Imagine, by comparison, a car with seatbelts and airbags which save your life if you crash at 55, but are required to fail at higher speeds as a "disincentive" to "criminals" who exceed the posted speed limit. Or, more to the point, how about a building code that limits the strength of earthquake bracing so it doesn't interfere with the ability of law enforcement to break down the walls with a battering ram if they suspect a dope deal...?

We believe that we should be able to exceed such "lowest common denominators" as a matter of principle as well as pragmatic business reality. Frankly, there shouldn't be any controversy surrounding a decision to opt for strong crypto, any more than there is about one's choice of backup storage media or the inclusion of uninterruptable power supplies in a bid for a telephone or computer system.

Finally, I am suspicious of the government's attempts to control a necessary tool of commerce and communication as if it were a major threat. Consider what would happen if, for example, all photocopiers were kept under lock and key, and under the constant vigilance of officials ever suspicious of the possible duplication of some threatening manuscript. That was exactly the policy in the old Soviet Union of the Brezhnev regime, and just look where it got them. ■

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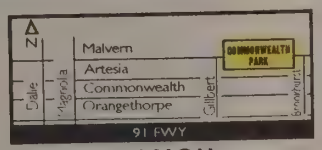

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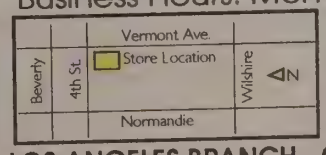

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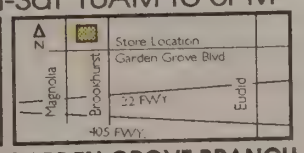

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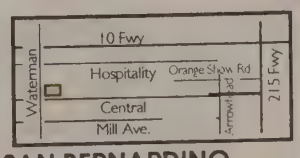

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Solutions

PENS AND PALMTOPS • BY MITSU HADEISHI

Whither Palmtops?

Since the fanfare surrounding the launch of the Apple Newton, the palmtop and PDA (personal digital assistant) industry is apparently entering a kind of doldrums period. New product announcements are slowing, and the introduction of new technology for existing products is also reaching a kind of plateau.

This could well be the result of lackluster demand for the Newton, which started off with strong sales that weren't sustained for very long. The industry seems to be entering a retrenchment period, in which technology and design are reengineered with an eye toward better performance, more functionality, and lower price.

Pens: Results Still Disappointing

Rumor has it that new PDAs are being designed with optional detachable keyboards (departing from the dogma that only pen-only computers could sell—as it turns out, the opposite seems to be the case). Pen-based computers still seem to primarily occupy a niche market, with more applications in point-of-sale and other vertical-market areas than in the larger general consumer market. I believe this has to do with the fundamental awkwardness of the pen input device; even if handwriting recognition were to operate perfectly, the simple fact is that writing stuff by hand is much slower than typing it in, even on the small keyboards available on palmtop computers.

I think it may not be until voice recognition becomes feasible on palmtop computers (something that will take some time) that non-keyboard interfaces will become practical for the wide majority of users. Although the pen interface might seem more "natural" to users unable or unwilling to use a keyboard, these computers have had difficulty penetrating the mass market.

Keyboard Units Thrive

Meanwhile, sales of the less expensive keyboard-based organizers continue to be strong and healthy. The Psion 3a, a keyboard-based palmtop reviewed recently in these pages, has enjoyed rising success in the market, as its ease-of-use, menu-driven graphical interface, and excellent overall design has made it popular with a wide range of consumers looking for a powerful and practical palmtop. Interest in the Psion 3a is evidenced by the strong showings in various computer network bulletin boards devoted to palmtops; it's the most popular palmtop organizer topic on CompuServe, for example.

The other strong market in palmtop-class machines continues to be the HP 100LX series and similar machines; these DOS-compatible palmtops are about the same price as the Apple Newton and compatibles, are capable of running DOS applications, and generally speaking have respectable organizer capabilities. Since these machines also tend to have PCMCIA slots, they are expandable using the vast and growing array of PCMCIA memory cards, fax modems, and other devices which I have covered at length in this and previous issues. Since the DOS-compatible sub-subnotebooks can also run DOS device drivers, they are also candidates for running network software, enabling you to be able to hook them to networks using PCMCIA Ethernet cards and the like.

I think it may not be until voice recognition becomes feasible on palmtop computers that non-keyboard interfaces will become practical for the wide majority of users.

This market is quite mature at this point, with a large installed base and ample software support. The disadvantage of these types of machines is, as always, that DOS was not specifically designed with palmtop computing in mind, and this makes the interface sometimes less than ideal for a very, very small computer (and very small screen and keyboard). Nevertheless the flexibility and compatibility of these machines are a great advantage to a large number of consumers.

It may be some time before a new wave of palmtop designs hits the market; until then, we will spend our time discussing existing organizers, palmtops, and pen-based systems as they evolve and as accessories and other enhancements emerge for them.

Convention Announcement

The Personal Communications Industry Association (PCIA) is holding their 46th annual convention on September 21–24 at the Washington State Convention Center. The conference is intended to cover a wide range of areas, including paging, cellular, wireless data, satellite communications, personal information devices, pen-based computers, and voice messaging, among others. For information call Robert Mesirow at (202)467-4770.

continued on page 65

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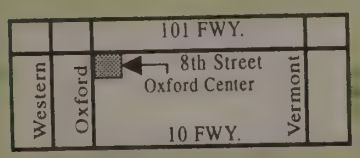

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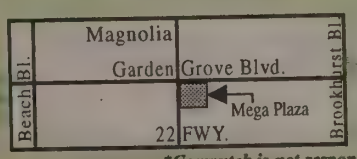

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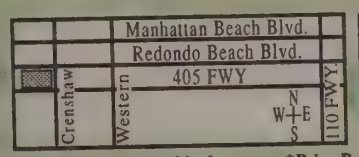

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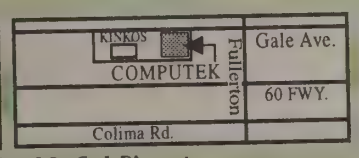

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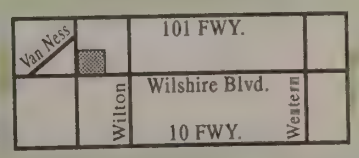

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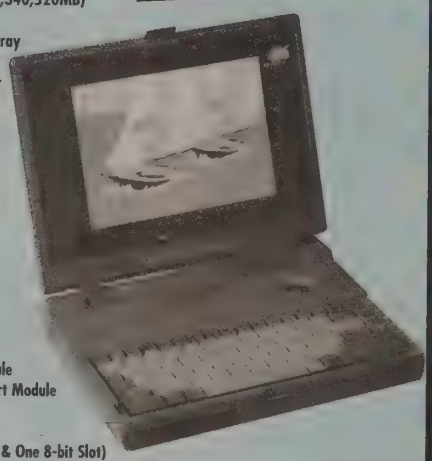

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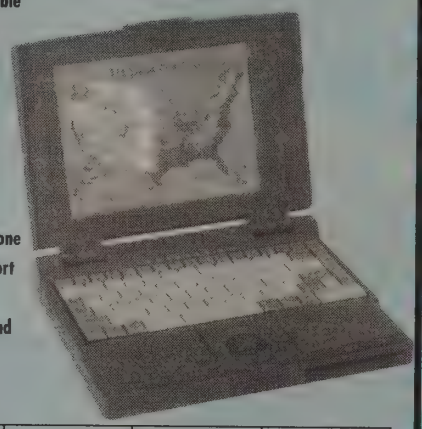

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- Lightweight: 5.5lbs
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- 1024 x 768 at 75Hz Refresh
- MPR II Low Radiation
- Multi-sync EPA

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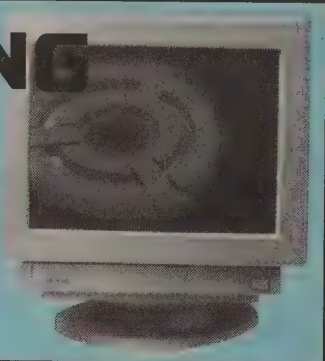

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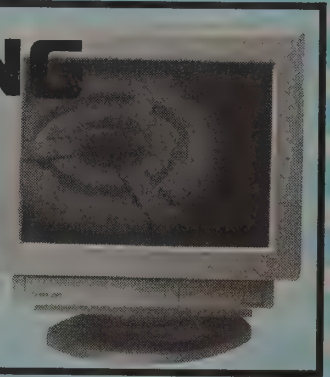

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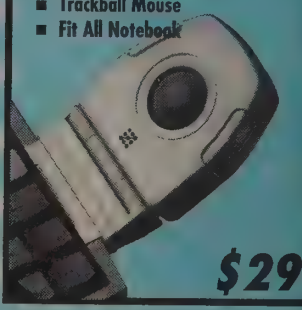

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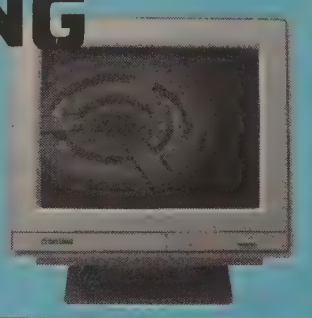

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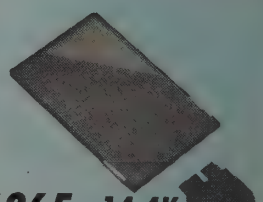

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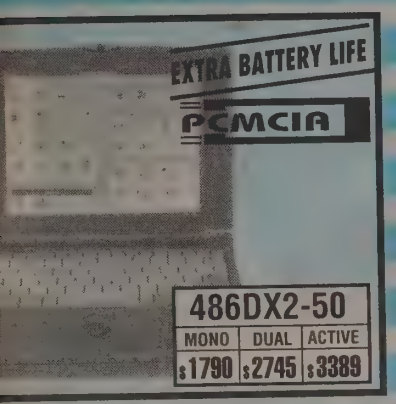

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- Intel 486 SX-25 SL Enhanced
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- 120Mb Hard Disk Removable
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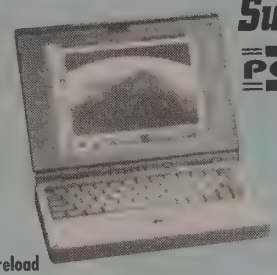
PCMCIA



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MiTAC Best Buy

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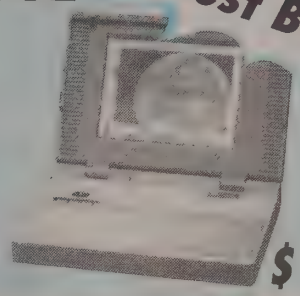
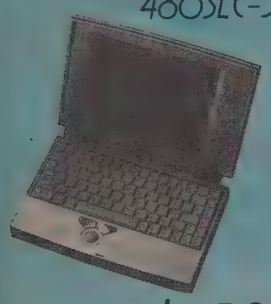
- Lightweight: 6.5lbs
- MS-DOS6.0, Windows 3.1



$1695

486SLC-33



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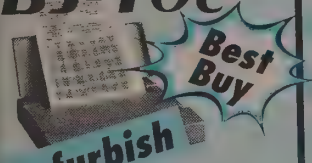

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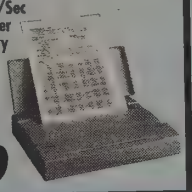
Canon Bubble Jet BJ-10sx

- 110 Characters/Sec
- Laser-Like Printer
- 2-Year Warranty



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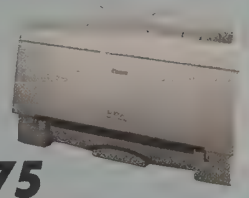

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- 400 DPI x 1200 DPI Hi-Resolution
- 20 Second Color Scanning Speed
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- One Year Warranty

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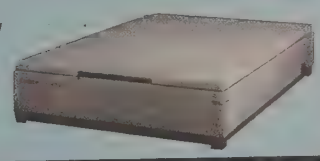

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3. You get performance and reliability.

Optical technology is approaching the performance of hard disks. You can actually run programs from your optical drive with great performance. Experts in graphics design, digital audio and video insist on CSC optical drives.

4. You get the ultimate backup and retrieval system.

When your hard disk fills up, just offload files to the optical drive. You can retrieve files instantly and you can *run programs from your optical drive.* Your only other reliable backup alternative is DAT tape. DAT works well, but it can take hours to backup and restore your files. And you'll never be able to run programs from a DAT tape.

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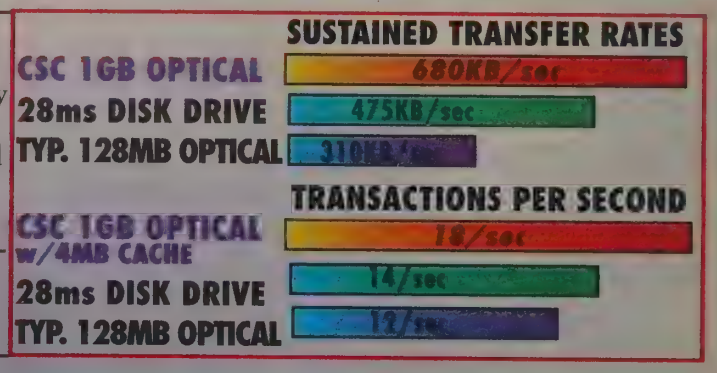
What about performance?

CSC optical drives are chosen by disk technicians for top performance and reliability. We avoid small, low performance units. An optical disk drive's performance is rated in terms of transfer rate and seek times. Here's how they compare:



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1. The SCSI interface (pronounced scuzzy) provides portability between PC, Macintosh, Sun, Silicon Graphics, and NeXT platforms. *In fact, any CSC optical drive can be used on any of these machines.* The only difference being the software drivers used.

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Look through this magazine and compare price per megabyte. You'll find others trying to sell smaller, slower 128MB drives for almost the same price as CSC's new high performance double sided 650MB units! Shop around. *Compare price and service.* When you're ready for optical, CSC is ready to help. Our technicians are optical experts-they'll help you install it yourself!

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LAPTOPS • BY ED KAHN

Traveling With Your Data

File Transfers From Laptops To Desktops

Unless you use your laptop as your only computer, you inevitably face the problem of how to easily and conveniently transfer files to and from your different machines. In the old days, we simply created files on a floppy disk and then carried them with us to the second machine. I still know people who keep all of their working files on floppies and install only the application programs on the hard drive. This procedure gets the job done, but it really defeats the purpose of fast, large hard drives. As you might expect, as hard drive capacity grew and more complex file structures evolved, copying files between hard drives via floppy disks became quite a chore.

The first powerful program to address this problem was LapLink, from Traveling Software. This program became the industry standard and is now in version five. LapLink V will do practically everything you could hope for in helping to copy files from computer to computer. In its earlier versions, you had to have the two computers close enough to connect them by a cable. In later versions, it was possible to transfer files over a modem if the program was installed on both computers. In fact, installation onto a second machine can be done over the phone lines. But since files move slowly over phone lines, it is more efficient to connect by cable if you are doing file transfers on a regular basis.

LapLink V can be configured to move just about any combination of files. For instance, it will copy all files to make the directories identical on two computers. You can set it to coordinate the two computers, making sure that the latest version of a file will be on both computers. You can choose to ignore certain files, directories, subdirectories, or types of files. In short, you can do just what you need to do. This is helpful when I get a new computer and want to transfer all of my data and application files, but do not want to transfer either the DOS or Windows files, onto the new computer. To do this, I simply connect the computers through the parallel cable—which gives a faster transfer rate than the serial connection—set up my criteria, and begin the transfer. LapLink V displays what percent of the job is done. It's like magic. If you change computers, this program is a must.

CommWorks

Traveling Software recently decided to bundle LapLink with a collection of other communications programs and market them as a suite called CommWorks. CommWorks includes four programs in addition to LapLink. LapLink Remote Access allows you to connect to another PC and use its printers and drives as if they were a part of your computer. You can connect through serial or parallel cables, infrared connections, or over a modem. Once you are connected, it will be like using the remote computer as a part of your system. Laptop users can connect to a home office and then print out reports or access files.

TSFax is a simple yet powerful fax program that lets you send and receive faxes on your computer. What I like about this program is that it is simple enough for anyone to use, yet it does all of the things needed in a basic fax program. You will, of course, need a modem that is capable of faxing as well as working with data. Once you have received the fax, you can save it in a file, print it, view it, or have it automatically sent to another location. There are lots of fax programs on the market these days, but for basic faxing needs, this one seems to get the job done.

LapLink V will do practically everything you could hope for in helping to copy files from computer to computer.

LapAlert runs in the background but keeps an eye open to let you know if files on your computer are changed by a remote user. This program will have little application unless you are also using LapLink Remote Access or TSFax.

The final program that comes with CommWorks is a basic communications program called TSOnLine. I played with this module for some time and was impressed by its features. It can easily connect to a bulletin board or computer service and comes with scripts that will let you log in with a single click of the mouse. If you have a particular number that you connect to regularly, you can set up an icon in the Program Manager (all of these modules run in Windows 3.1) that will open the program and then dial this number. If you set up a script—easy instructions are included for doing this—you can have the program automatically log on with your ID and password. You can get even more complex by constructing scripts that do a series of functions for you automatically. A learn feature lets you construct the scripts by performing the action one time manually. I could say more about this program, but it is enough to say that if you are looking for a communications program that is well documented and will do most of the basic tasks, TSOnLine may be the one for you.

One of the advantages of CommWorks is that it presents a unified interface for all of the modules. This collection of programs, for $199.95, is a bargain and works within Windows.

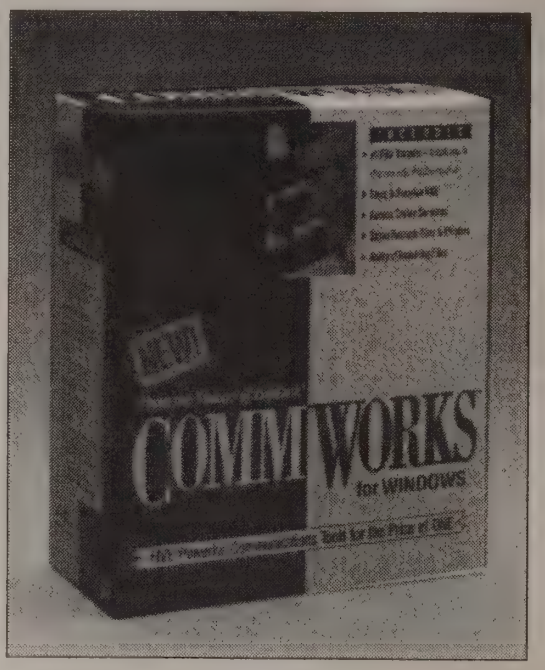
FileRunner

While I highly recommend LapLink as a file transfer program, there is one thing it

does not do. It will not let you travel from place to place without a computer, taking only the files you will need when you arrive at your destination. Often, my desktop is at one location and my laptop at another. Traveling between these two locations, I have not had a convenient way of taking my work along. I was left with the old copy-files-to-disk routine and it was always a nuisance.

A couple of years ago, FileRunner came on the market. This was the answer to my prayer. Installed on each of your computers, you make a set of diskettes to take with you. You set up the disk by defining which directories and kinds of files you want. For instance, on my first disk, I have all of the files in my telephone directory that begin with "personal." I also have all of the files in my letter subdirectory. In all, I have ten classifications of files that I want to take along. When I get to the other end, I call up the program, insert the disk, and hit two keys. The rest is automatic.

This program is a must for anyone who uses multiple computers in more than one location. It doesn't take the place of LapLink, but I use it almost daily and use LapLink only on rare occasions. You need both of these products. FileRunner will hold up to three hundred files on a 3.5" floppy disk, and now comes in DOS, Windows, and Mac versions. I prefer the DOS version over the Windows version. Mac users, fortunately, will not have to make a choice. But all versions will get the job done and I can't recommend them too highly. A small, well-run company publishes FileRunner, so keep looking if you have trouble finding it in your local store.



RESOURCES:

CommWorks, $199.95
Traveling Software, Inc.
18702 N. Creek Pkwy.
Bothell, WA 98011
1-800-343-8080

FileRunner, $99.95
MBS Technologies, Inc.
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Nanao FlexScan F340i-W, $799
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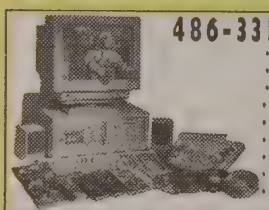

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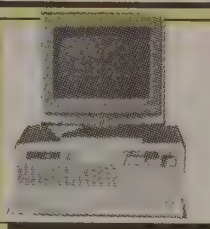

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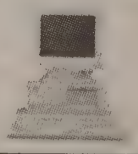

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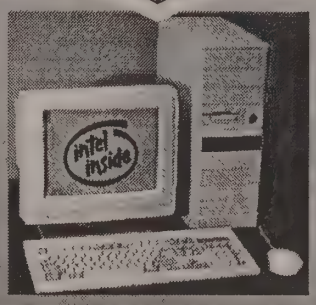

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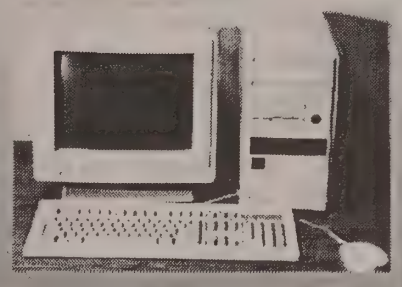

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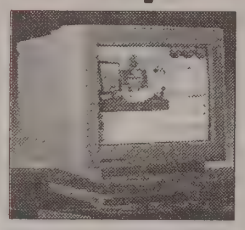

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LAPTOPS

Computer Of The Month

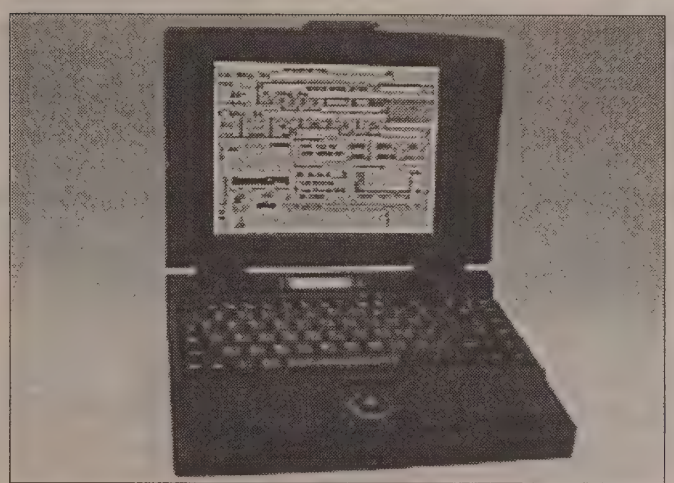
Altima's New Virage Line

From its first computer in the late 1980s, I have consistently loved the products offered by Altima. Despite the size of the company, the people at Altima are so tuned in to the needs of the marketplace that I have no trouble recommending their products. They have focused on portables and consistently strive to stay ahead of the pack.

Altima's newest entry is, as usual, a step ahead of the competition. It is difficult to describe this portable as a single computer because in reality it is a product line. The Virage series is designed as a line of modular components that can be assembled any way the customer wants. At the low end is a monochrome unit powered by a 486SX-33 processor with a 120MB hard disk and a $1632 price tag. The top of the line configuration boasts an active matrix color display powered by a 486DX2-66 processor with a 524MB hard drive and a price of $5119. When you take into account all the hard drive sizes, choice of four different processors, and three display options, you have something like 120 different models. Memory comes standard as either 4MB or 16MB, but you can get any amount up to 32MB.

Virtually every component of the system, from the hard drive to the display, can be upgraded by the user. The design of the Virage line is based on the notion that the customer can get any configuration and that the machine can be constantly upgraded as the technology and prices change. Everything from the central processor to the display and hard drives is removable by the user.

The basic design features are excellent. It weighs between 6/7lbs., depending upon the configuration. The dimensions are 11.3" x 8.7" x 1.6". All models come with a high-density removable floppy drive. You can replace the floppy drive with a second Nickel Metal Hydride battery pack ($139), which can boost your uninterrupted battery usage up to ten hours. Recharge time is about an hour and a half.



The Virage series is designed as a line of modular components that can be assembled any way the customer wants.

The keyboard design is excellent and the feel is good. Of course, you can use any PS/2 keyboard you like and Altima sells an, attractive one ($99). That includes a very nice built-in trackball. While I like it better than most of the built-in models that come on portables, I still enjoy having the option of using a standard mouse connected to the serial port.

The 9.5" display is also good, but you have the option of using any color monitor you like. Altima can also sell you a 17" monitor ($799), but I used the Nanao FlexScan F340i-W that I have been raving about for the last few months. Altima's video is a high-performance 32-bit VESA local bus system, so it is perfectly suited to video-intense applications.

Altima leads the pack in its design. This time they have included an audio system. On the front of the computer are ports for plugging in speakers and a built-in microphone. In addition, they have a microphone. The sound system is compatible with Sound Blaster in case you need to play video games on the road. The sound capabilities of the Virage are quite sophisticated and I urge you to check out this computer if you need sound as a standard part of your computer use.

Standard interfaces include a serial and parallel port. There are also either two PCMCIA Type II slots or one Type III slot. The only difference between the two cards is their height. Altima has a variety of accessories to fit these slots, but you can also use any PCMCIA product. That is the beauty of this standard. It really means that parts become interchangeable and you are not limited in your selection of PCMCIA accessories.

Whichever configuration you select, all Virage models come with MS-DOS 6.2 and Windows 3.1 preloaded. A number of utilities are included on disk. And finally, a small carrying case comes with the unit.

A wide selection of accessories ranging from PCMCIA cards to a docking station ($499) are available from Altima. A one-year parts and labor warranty protects you from failure, and five-days-a-week toll-free technical support comes with the unit. Once again, I highly recommend the new Altima Virage portable computers.■

RESOURCES:

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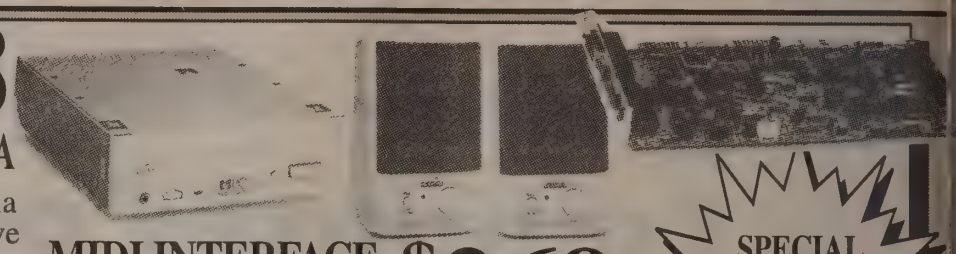

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BY ROBERT MOSKOWITZ

Los Angeles' Metro Transportation Authority's "Blue Line Televillage"

Combining Its New Fiber Optic And Light Rail Systems, The Blue Line Televillage Offers To Help Revitalize Los Angeles

What if you had a three-hundred-mile high-capacity fiber-optic backbone system available to you, and it had plenty of excess capacity? What if it ran through all corners of a region desperate for new sources of information, access, and telematic mobility?

Chances are you'd try to put it to good use. And that's just the concept behind Los Angeles County's Metropolitan Transportation Authority's "Blue Line Televillage," an undertaking that some experts are labeling "the single most innovative application of telecommuting and telecommunications in the world today!"

Actually, the Blue Line Televillage is only the first demonstration (as far as I can determine, anywhere in the world) of a concept contained in a policy report entitled "Metro Net—Fiber Optics and Metro Rail: Strategies for Development." The report lays out a comprehensive analysis and justification for just the kind of projects of which the Televillage is a small example. The author of the Metro Net report is Walter Siembab, a prominent telecommunications strategist and consultant who has previously been mentioned in this space as the director of Telecommunications for Clean Air, and the Telework Facilities Exchange project. (I'll cover the Metro Net concept in detail in a future article.)

The Blue Line happens to be a perfect facility for this demonstration project. It is a modern, light rail system that runs from the downtown area of Los Angeles to Long Beach, some twenty miles away. The fiber optic system was initially installed to provide a channel for video security camera signals and other railroad control functions. But these demands leave plenty of unused capacity on the cable—capacity that can be made available for other purposes, essentially for free.

The Blue Line Televillage project will attempt to make good use of this valuable but heretofore inaccessible resource. Budgeted at $559,000, but charged with encouraging in-kind grants and contributions from participating organizations and institutions, the Televillage demonstration may bring more than a million dollars in seed and development money to a neighborhood with a long history of woefully scarce resources.

Over a period of twenty months, the Televillage project will provide no-fee and low-fee opportunities for residents along the Blue Line to make use of existing and yet-to-be-installed facilities such as workstations, meeting rooms, and a variety of automated devices.

The project's broad sweep of demonstration and development goals includes efforts to establish totally new community services by linking existing institutions with constituents or consumers who are now too isolated to benefit from the services and resources the institutions have to offer. This would include—but not be limited to—trade, technical, and other levels of education; direct access to City, County, and State information and services; and medical counseling, self-help awareness, and outpatient treatment.

A large part of the anticipated benefit from the Televillage project will be generated by the individual and collective fallout that results from introducing many previously disadvantaged adults and children to the advanced computer, video, and information technologies generally associated with telework and telecommunications.

Many economists suggest that providing new and enhanced services at, or adjacent to, Blue Line rail stations would increase the development value of surrounding properties. Some suggest the Televillage project could become both the information backbone for decentralized organizations and the physical backbone for a new wave of urban renewal.

At first glance, installing telework facilities along its right-of-way would seem counterproductive to the MTA's mandated drive to increase ridership. But preliminary studies seem to indicate that providing information and telework services along the right-of-way would also stimulate rail travel. By attracting people and in turn development to Blue Line stations, the Televillage project is likely to stimulate new activities that would be highly conducive to increased rail travel. What's more, the Televillage services and activities are likely to generate excess revenue that can be used to help defray the cost of running the railroad, which in turn might allow fares to be reduced enough to attract additional commuters from cars to the light rail system.

The first stages of the Televillage project are intentionally designed to enlist community support and input to help determine exactly what services will be implemented first, and the methods and pricing patterns by which they will be offered. Thus, no clear plan yet exists for providing specific services. However, informed speculation suggests that some of the most exciting and important uses of the Televillage concept will likely be as follows:

Some suggest the Televillage project could become both the information backbone for decentralized organizations and the physical backbone for a new wave of urban renewal.

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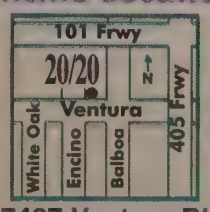

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applications for fiber optic capabilities will be to support a wide range of transaction machines. These could certainly include automatic teller machines from banks that do not now have offices in the Televillage project area. One can also expect to see government-operated information kiosks providing answers to questions, registration capabilities, and new channels for two-way dialog with elected representatives and their staffs.

There is plenty of precedent for this. For example, the state of California has successfully administered intake interviews to applicants in its Aid to Families with Dependent Children program. The state government also established fifteen kiosks in remote locations which provided access to information and services from eighteen different state government agencies. Los Angeles County installed a 24-hour "AutoClerk" kiosk at the Long Beach County Courthouse, allowing drivers to go there to pay the fines on a variety of parking and moving violations.

Other government services could similarly be offered through automated kiosks or through decentralized, professionally staffed offices. These offices could be far smaller and less expensive to operate than their central-city equivalents because they could be supported by information services delivered over the Blue Line fiber network. Later, commercial organizations might want to operate facilities near these established sites.

One plan is for Blue Line stations or nearby facilities to be "built out" with two types of rooms: One type would be "open plan" rooms suitable for meetings, video conferences, and classroom-style distance-learning experiences. A second type of room would contain many smaller, modular, flexible spaces that could be fitted out for use as telework stations or more individualized activities and study. Residents desiring to take a class or access a provided service would need only walk or drive to the nearest Blue Line station, and if necessary could then take a train to the nearest suitable site.

By attracting people and in turn development to Blue Line stations, the Televillage project is likely to stimulate new activities that would be highly conducive to increased rail travel.

Other facilities could be constructed near Blue Line stations to support outpatient medical services, counseling, and instruction. Kaiser Permanente, which has a great many subscribers in areas close to the Blue Line route, could establish clinics at favorable sites and staff them during peak-demand hours. Medical personnel at the sites could be supported over the fiber-optic network by medical records and more specialized staff located in a different part of the city. It is unlikely that such services could be offered cost-effectively without the Televillage concept or use of the Blue Line's network resources.

The same meeting rooms, clinic resources, and workstation facilities could be used at different times by a wide variety of organizations.

Telework Sites

With jobs hard to come by in areas along much of the Blue Line route, one attractive possibility of the Televillage project is to support telework facilities where community residents can perform useful work for companies located outside their neighbor-

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hoods, and where other residents with fewer skills can learn and upgrade their capacity to earn a living wage.

For example, organizations offering medical services or distance-learning opportunities could hire local residents to do some or all of their keypunching, billing, and other telework-appropriate tasks. Fully trained and able to work very close to their homes, these employees would likely prove at least as reliable as other employees, who of necessity must commute fairly long distances to reach their place of work.

Educational centers such as UCLA Extension or local technical schools are likely to offer "distance-learning" courses fed from their campuses directly to meeting rooms along the Blue Line right-of-way. Because of the fiber-optic backbone's capabilities, these classes could be lecture oriented, or could be organized around lively interactive discussions.

Teleconferencing Capabilities

By providing suitable meeting rooms at sites along the Blue Line right-of-way, the Televillage project will be able to support a variety of teleconferencing formats. This would enable community groups to meet with each other, and with organizations based outside the community more often and more readily. Offering telecommunications support for community meetings would help facilitate residents' pooling their ideas and information, making plans, formulating programs, and carrying out action agendas of almost any nature.

Meetings could include classroom-teacher interactions, political discussion-organizing convocations, and/or citizen-parent conversations in support of schools and other local institutions.

The Televillage proposal would be operated in connection with the Drew Economic Development Corporation, which for twelve years has been an integral part of South Central Los Angeles' community, and which has a successful track record of developing affordable housing, child care centers, business training programs, and industrial investment.

According to the plan, the specific mix of public, private, and subsidized services to be implemented at each station will be determined through community input, and by research into community requirements and demographics. The study will consider each potential site in terms of such important factors as:

a) the local population density and characteristics;

b) the local population's need for health care, jobs, education, and other services;

c) the present level of job skills and employment among residents near the site;

d) the potential for those presently employed to be telecommuting once the site is opened; and

e) how access to specific services at the proposed site would impact the local residents' pattern of economic, lifestyle, and transportation choices.

Derailed Before Leaving The Station?

Unfortunately, as of late April the project remains on hold because of funding prob-

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50-90 Hz M/S	50-90 Hz M/S	50-90 Hz M/S	50-90 Hz M/S	50-90 Hz M/S	50-90 Hz M/S
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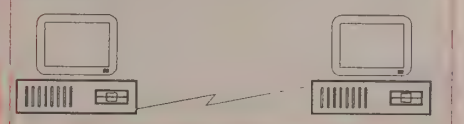

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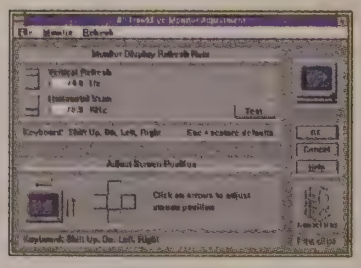

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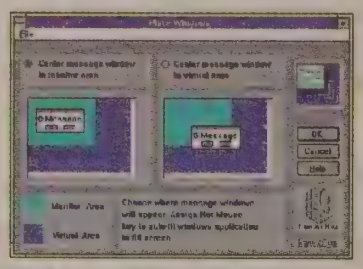
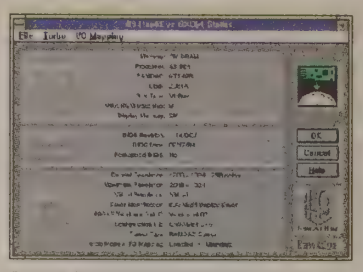


Place Windows: Quickly position dialog boxes to screen center or fit applications to full screen when in virtual desktop mode.



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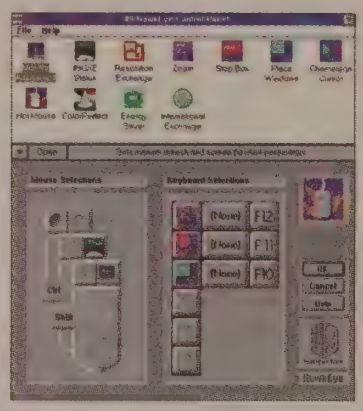

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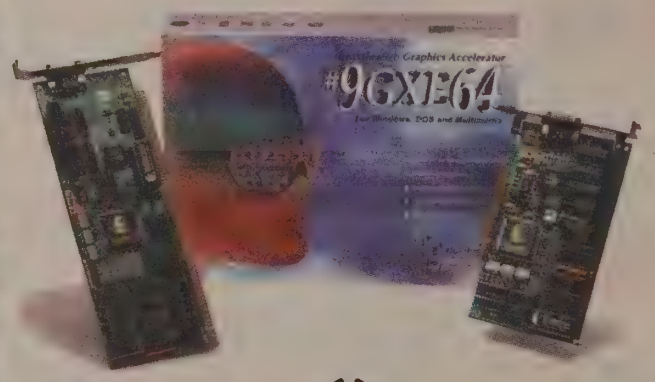

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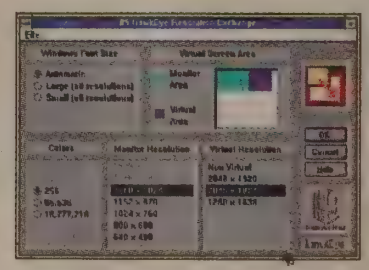

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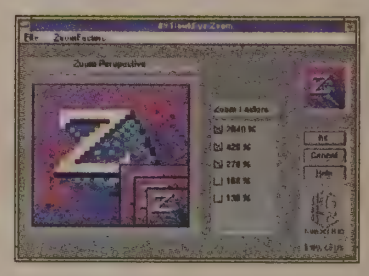

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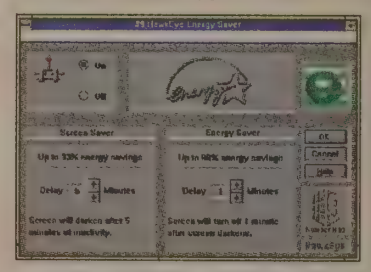

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lems at the MTA. In fact, the Televillage Project Coordinator's position might be entirely eliminated as a cost-saving measure. If that happens, the entire Televillage project stands a good chance of becoming "de-obligated," which is a bureaucratic euphemism for returning the money to the general expense pool where it would pay for light bulbs and paint jobs instead.

There is talk among insiders of a tentative plan to shift the burden of Televillage staff costs to CalTrans, which wants the project to go forward. But CalTrans itself is on a tight budget. Another source of difficulty in getting CalTrans committed to the project is that decision-makers there are having trouble determining whether to administrate the Televillage from Los Angeles or Sacramento. This sounds to outsiders like a turf dispute, but without direct knowledge I'm reluctant to call it one.

Information on the status of the Televillage project has been particularly hard to come by. None of the MTA's public information staff even knew what it was when I first made inquiries. Only a single staffer, Dan Wright, seems knowledgeable about the program, but his position is the one that's under the Sword of Damocles.

Franklin White, who runs the MTA, specifically refused to be interviewed for this article, and Judy Wilson, a knowledgeable member of his staff, reneged on a promise to call me. From this and other evidence, it's clear there is now no sign within the MTA of a strong commitment to this project.

Personally, it seems inconceivable to me that the MTA is willing to allow a relatively minuscule item in its multi-billion-dollar budget to be the stumbling block that denies the people of South Central Los Angeles what seems to be a totally new and exciting opportunity to gain access to government services and to improve themselves economically. Are we going to see a replay of the old story: For want of a nail, the war was lost?

I'll keep you posted on further developments regarding the Blue Line Televillage as they occur (or fail to occur). In the meantime, you might want to inquire about the status of the Blue Line Televillage project directly from Franklin White. His telephone number is (213)244-6568. ■

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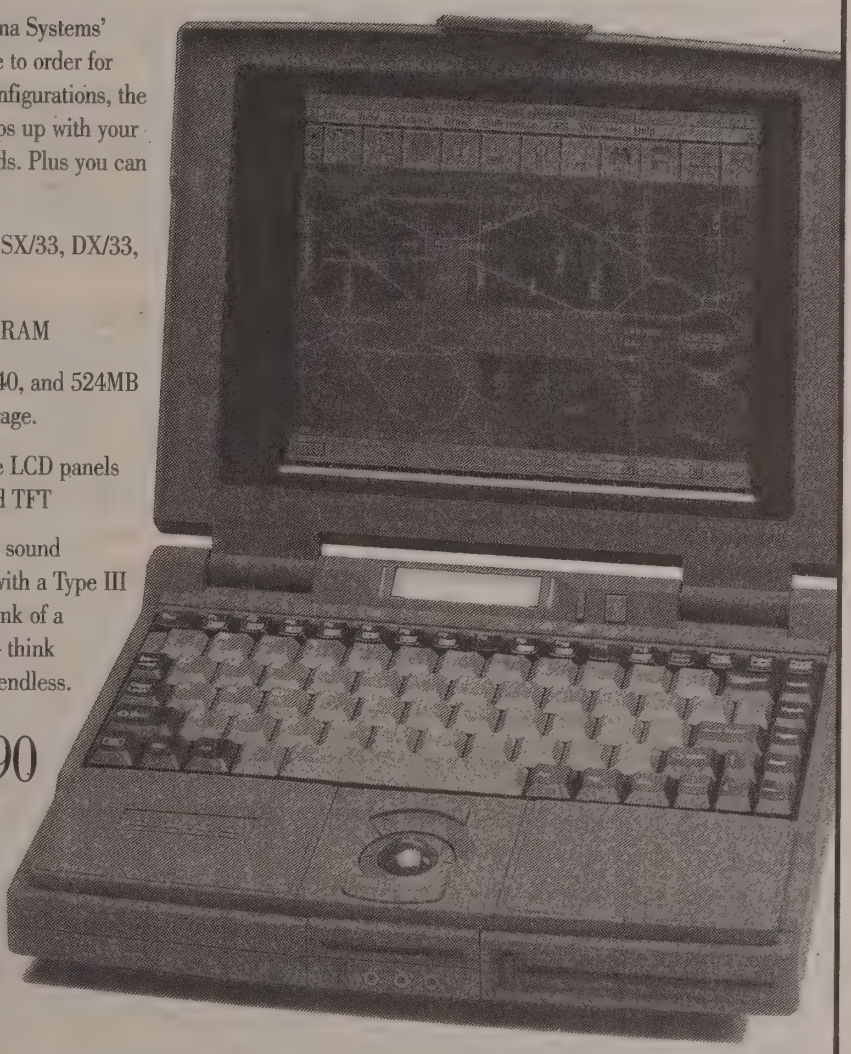

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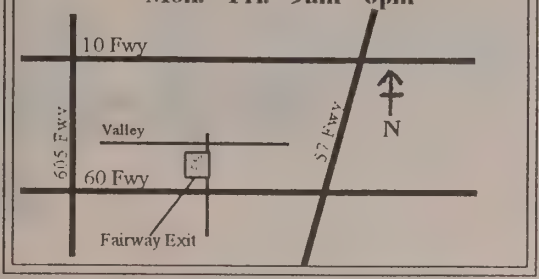

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Resource Discovery And Access

It's Out There Somewhere, But How To Find It?

In the early days of the commercialization of the Internet (at least two years ago) new users used to complain about the lack of available services. Beyond electronic mail and USENET news there was ftp and telnet; those last two protocols were perceived as hard to use because they were command-line oriented.

There was also the perception that access to even these services required a UNIX system, and they were therefore inaccessible to all but the very sophisticated technical user. There is some truth to this statement. However, software to access even the basic Internet services has been available for at least five years on both Mac and PC. The biggest problem with the basic Internet services such as telnet and ftp is they don't provide any kind of roadmap of what resources are available on the Internet.

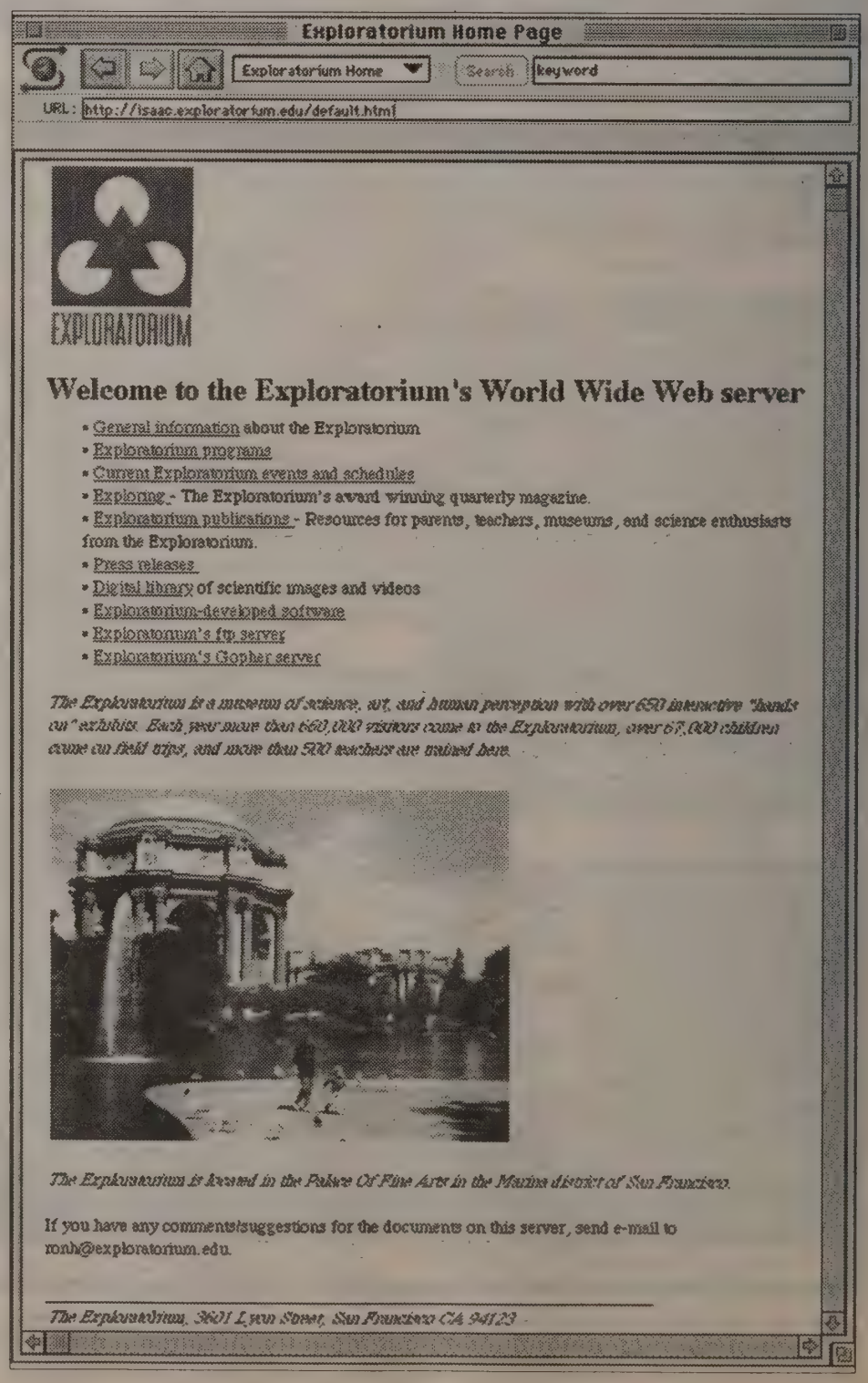
Evolving Search Tools

Telnet lets you remotely access any host on the Internet that you have a login account on; ftp lets you transfer files from any remote host. A clever extension of ftp, called anonymous ftp, lets you access large archives of publicly available information without requiring a login account on the remote host.

But how do you know which host to telnet to, to access, say, the Library of Congress card catalog? And which anonymous ftp site has that nifty Mac game software?

In the old days, people tended to find this information via word of mouth. As offerings on the Internet grew, the word-of-mouth approach rapidly became inadequate; users increasingly complained

It is now possible to run Mosaic on a Mac or PC at home with connections to an Internet provider over a dialup phone link. While the limited bandwidth of even high-speed modems means the application does not retrieve information as fast, Mosaic is still usable.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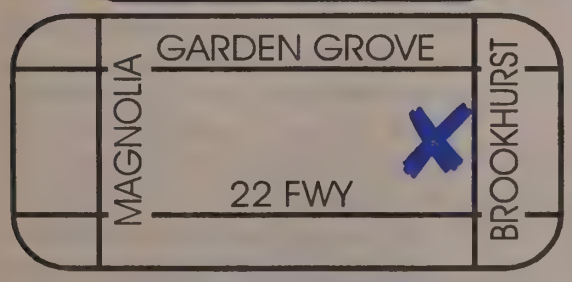

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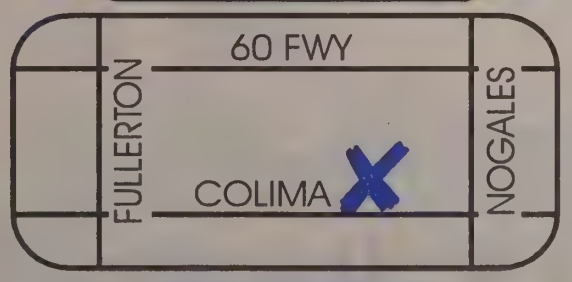

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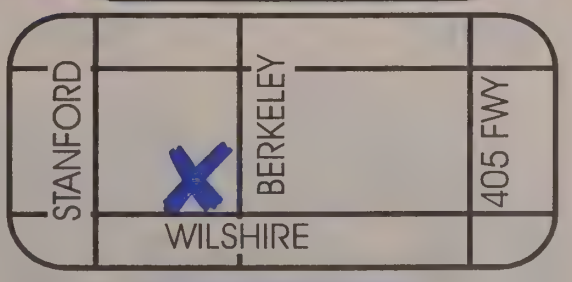

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about being unable to locate valuable and needed resources.

In response to these complaints, a whole flock of resource discovery services were developed. The first, archie, was originally a simple way of searching anonymous ftp sites. Archie clients suffered from the same command-line interface as ftp, but the program did get the job done in a relatively rudimentary way. More importantly, though, archie helped spawn some other resource discovery protocols.

The next to come along and become popular was Gopher, sometimes called "duct tape" for the Internet. It incorporated two important features: first, it moved away from a command-line interface and presented users with a set of menus from which they could select items of interest. More importantly, one Gopher site could add links to information at another Gopher site. These links let a user navigate from one site to another site transparently.

Gopher also incorporated much of the functionality of anonymous ftp as a part of its design. You can retrieve files with Gopher just like you can with ftp, since many anonymous ftp servers also support Gopher access to their archives.

An adjunct to Gopher is Veronica, which is sort of an archie for Gopher. Veronica lets you search the entire Gopherspace system by keyword. Several sites have set up Veronica servers; a Veronica server periodically scans all the Gopher sites and indexes each Gopher entry.

Another resource discovery service is also WAIS (Wide Area Information Server). WAIS is a distributed document indexing and retrieval system. It lets you access sets of documents distributed around the Internet by keywords. WAIS uses a sophisticated search strategy which checks the proximity of keywords in a document and returns the documents to a user, prioritized according to how well the document meets the user's search criteria. WAIS, like Gopher, has a system to link various WAIS servers around the Internet. A WAIS search can search documents on many servers at the same time.

Finally, we have the World Wide Web. The World Wide Web (WWW) is a hypertext-based information system. WWW is similar to Gopher, but is not limited to being just a set of hierarchical menus. Pointers to other documents can be embedded as part of a document, which is the whole point of hypertext in the first place.

So in the new world of resource discovery and information retrieval we have archie, WAIS, Gopher, Veronica, and WWW—and don't forget all those plain ftp archives out there on the Internet, or separate information systems available via telnet. All these systems are a little bit different because they serve somewhat different audiences.

Do you have to switch user interfaces to use all these systems? Yes and no. You can get user interfaces for Gopher and WAIS that only work with those services. Typically Veronica is accessible from all

continued on page 118

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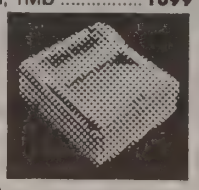

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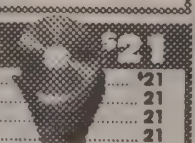

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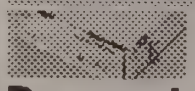

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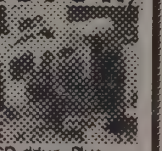

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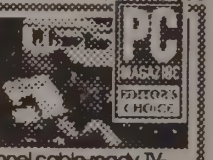

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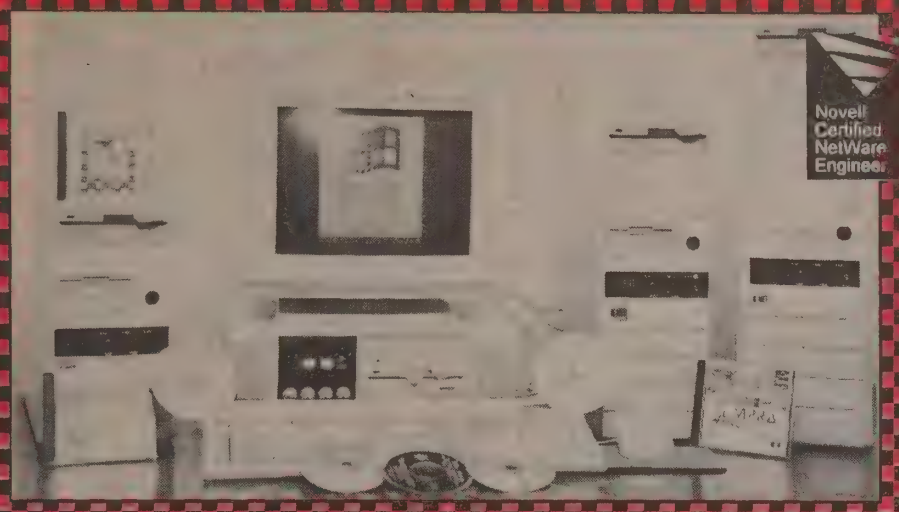

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What To Do When Your NetWare Server Crashes

A Short Course In Using NetWare's Volume Repair Tool, VREPAIR

Sooner or later, it'll happen. Your NetWare server will crash, and when you power the system back up you'll see a little message: "Block allocation size does not match" or some other error message telling you that one of your NetWare volumes couldn't be mounted due to some sort of data error. It's time to roll up your sleeves and take a crash course in the NetWare volume repair tool, VREPAIR.

It happened to me recently. Murphy's Law was in full swing the day before April Fools, the last day of the quarter, when a SIMM memory card failed, causing a parity error that crashed the Accounting server.

NetWare keeps two copies of its Block and File allocation tables on disk. When a file server goes down suddenly during a disk update, these tables can get out of sync. The same holds true if the server has "mirrored" drives (two drives with duplicate or "mirror" copies of each other's data), and NetWare goes down before it has had a chance to write a change to both drives. Later, when you try to bring the server up, NetWare checks the integrity of these files, and refuses to mount any NetWare volume if they don't match. When this happens you have two options: initialize the volume and reload it from tape, or attempt to salvage the corrupted drives using VREPAIR.

VREPAIR inspects the primary and secondary copies of each table and disk volume, and tries to make an educated guess about which table entries are correct, and which entries have been corrupted. It can be a scary process, sitting there watching VREPAIR as it tries to weed out the good and the bad entries on your disk. Nine times out of ten, VREPAIR is able to make sense out of the two sets of allocation tables. One time in ten, it fails, and you have to reload from tape—meaning your users lose all the work they've done since the last backup.

Oftentimes VREPAIR doesn't fix all the problems on its first pass, so when you get back from coffee, run VREPAIR a second time.

VREPAIR is understandably the most feared command in the NetWare command set—most LAN administrators rarely have to use VREPAIR, so they never get comfortable with its operation, and when they do have to use it, it's always in a "crisis situation." Despite its reputation, VREPAIR is actually pretty easy to use. The key to making a swift and smooth recovery with VREPAIR is planning ahead.

First, you need to copy VREPAIR to diskette, and store the diskette near the server, so it'll be right there when you need it. Then, just once in a while when you have to take the server down for maintenance anyway, try DISMOUNTing a NetWare volume before you DOWN the server, and run VREPAIR (don't worry, VREPAIR won't damage a disk in good working condition). Go over the NetWare documentation for VREPAIR in the Systems Administration manual, and make sure you feel comfortable with the command. That way you won't have to familiarize yourself with a new command while the entire accounting department wanders by, one by one, to ask you when the server will be up.

When disaster does strike, here are some helpful hints and tips. First, when you start VREPAIR using the command LOAD A:\VREPAIR, you should set the VREPAIR option so that it doesn't pause after each error (this will help preserve your sanity), but do select the "log errors to a file" option (this will create a list of files that VREPAIR considers "suspect," and may be damaged). You should also make sure that the "Write only changed directory and FAT entries out to disk" option is set (this is the default), and I like to set the "Write changes immediately to disk" option. Once you've set these options, select the "Repair a volume" from the VREPAIR menu and go get a cup of coffee. VREPAIRs usually take a while.

Oftentimes VREPAIR doesn't fix all the problems on its first pass, so when you get back from coffee, run VREPAIR a second time—it shouldn't take long this time around, then exit VREPAIR and try to MOUNT the VREPAIRed volume.

This is the moment of truth. Either VREPAIR will have fixed the corrupted volume, and the volume will "mount" normally, or you will have to use INSTALL to delete and re-create the damaged volume, then reload from your most recent backup tape.

As it so happened, Murphy was smiling on the accountants. After installing a new SIMM on April first, VREPAIR ground away for half an hour trying to make sense of the Accounting Server's mirrored drives, but it fixed the problems, and I didn't have to reload from tape.

After that, all I had to do was convince the guys in accounting that the whole thing wasn't some elaborate April Fools Day prank. I wonder what they meant by "just wait 'til next year..." ■

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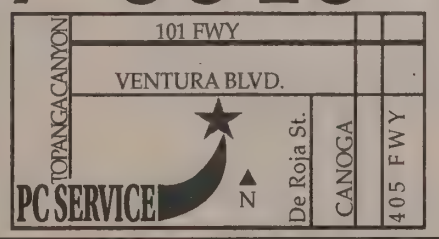

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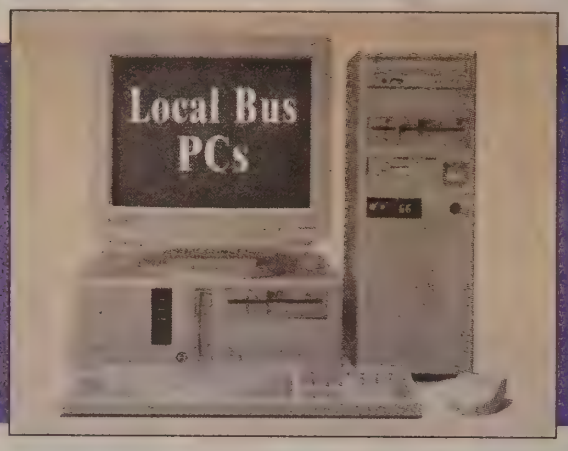

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It's hardly news that the Internet and the applications used to access it are changing—the Internet has done almost nothing but change in its fifteen-year history. What's interesting is that the change is systematic. The Internet really does behave like a very large ecological system, and when, for whatever reason, one thing changes, others adjust.

The PC Connection

The big change is not the number—or the intelligence—of the Internet's users. Rather, it has to do with the hardware people use to get connected to the Internet, and how that connection is achieved. The hardware of choice for interacting with the Internet used to be something (a workstation or a larger, server-class machine) running UNIX. Gradually, the balance has shifted in favor of personal computers.

Connectivity used to be a matter of being permanently attached to a local network (usually TCP/IP-based) running on cabling (like Ethernet) with moderately good capacity for transmitting data. Connectivity is moving toward temporary connections established between personal computers and the Internet over ordinary phone lines, using the Point-to-Point Protocol (PPP) or some other scheme for moving packets over normal phone lines.

This change means three things. More Internet participants are using hardware capable of supporting graphical interfaces. The people with this hardware are communicating with the Internet over a slower connection (typically a 14.4kbps modem). The desktop hardware that is used to access the Internet can't be assumed to be on a local network, and consequently has less disk space available for the Internet user to store applications that use Internet resources.

Not surprisingly, users who find themselves trying to work with the Internet on a standalone desktop computer have different application needs than users with a permanent network connection, more powerful hardware, and mega-oodles of disk storage capacity.

Internet Software, New And Classic

In the past, Internet applications were a mixed bag of discrete utilities. The basic suite of utilities packaged with UNIX includes ftp, telnet, ping, email, whois, and finger. In their most common forms, these utilities presume as little as possible about the display environment (they can all be used from ASCII terminals), and they are all single-protocol applications. Telnet and finger share a protocol; ftp, ping, and e-mail all have protocols of their own. None of the basic Internet tools uses more than one protocol.

As the Internet community grew, its members developed a number of applications that were donated to the community at large. These include innovative tools for reading mail; tools for reading and distributing USENET news groups, archie, gopher, the WorldWideWeb, Internet Relay Chat, and the like.

The applications created in the Internet community are more diverse than the bundled software, and show greater interest in taking advantage of display technology. Given an interesting application, sooner or later someone will create a version for most of the popular GUIs in use today.

The community-developed applications also boast friendlier interfaces (menus, less terse help, and so forth) than the older bundled applications. The user-developed software also tends to interact with other programs more smoothly. Gopher, for example, offers the user the ability to distribute items read through gopher via email.

> The hardware of choice for interacting with the Internet used to be something running UNIX. Gradually, the balance has shifted in favor of personal computers.

In general, however, the community-developed applications have also been single-protocol programs. Gopher can start e-mail or ftp clients, but it doesn't provide an interface to all their features. (WWW browsers, able to interact with Gopher servers, were an early hint that applications could work with more than one protocol effectively.)

Much of the community-developed software consists of standalone utilities (file compression programs, viewers for graphical images, players for sounds, for example) to support interesting features not yet integrated with the applications for accessing network resources.

The community's contributions also reflect the styles and preferences of their creators. There are email readers and network news readers for every taste. Gopher users working under Windows have no fewer than three clients from which to choose, and browsers for the WorldWideWeb exist in similar profusion.

Over the past few years, a novice Internet user could get a practical education in computer basics by shopping around among all the different applications and utilities published in the Internet community.

The All-In-One Connectivity Package

As the balance in typical hardware and connectivity has shifted from UNIX computers with permanent network attachments to personal computers only intermittently connected to the Internet, application development has also shifted away from the notion of a separate tool for each network application. The new trend in Internet application development is

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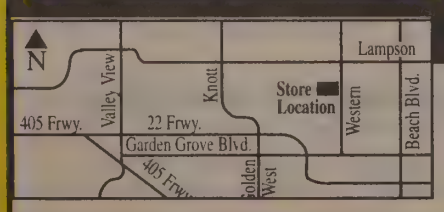

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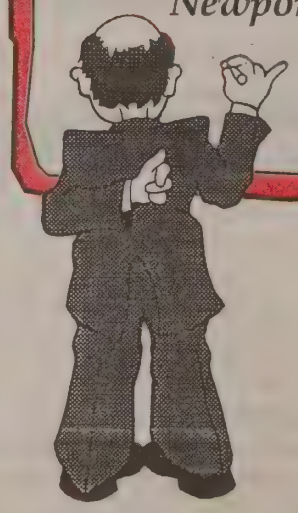

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toward integrated packages featuring multiprotocol applications, capable of using a known and powerful graphic display environment, and optimized for serial line access.

This new trend is represented in at least three different ways of packaging Internet applications.

The first of these is an extension of the community-developed Internet applications and is best represented by the NCSA Mosaic browser for Windows. Mosaic uses a standard Windows socket interface (the winsock API) and will run with any network software that uses that API. Mosaic provides access to servers for both the WorldWideWeb and Gopher. With clever programming of WWW servers, Mosaic has interfaces to other Internet applications (FTP, Finger, X.500, and Whois). In keeping with the spirit of the web, Mosaic incorporates the ability to display in-line graphics images.

Users who find themselves trying to work with the Internet on a standalone desktop computer have different application needs than users with a permanent network connection, more powerful hardware, and mega-oodles of disk storage capacity.

A second approach to repackaging Internet applications is to establish a suite of GUI-based Internet clients that can be bundled with network protocol implementations. This is not unlike the original "software tools" approach taken by the UNIX vendors, but it's taken a long time to establish adequate packages of Windows applications. The applications in this kind of package may not be integrated, but they at least coexist in a single folder and use Windows in a consistent way.

NetManage's Chameleon products are an example of this kind of package. NetManage is a network software vendor; its Chameleon products package TCP/IP and PPP implementations with a number of Internet application clients for Windows. (There are two Chameleon products, one a full TCP/IP implementation, one that's PPP only.) None of the Chameleon clients is multiprotocol, but they all look and behave consistently. You'll still need supporting utilities to do things like image display, file compression, and unencoding.

Chameleon includes some interesting extras. One is a Visual Scripting Language for developing other tools sharing the same look and feel as the included client programs—an industrious user could whip up a GUI interface for uudecode, for example. There's also an ftp server for Windows that allows the user to publish files for other users to download. Chameleon's network connectivity is general purpose: it can accommodate any winsock compliant clients.

Finally, there are tightly integrated packages that provide a network protocol implementation and access to a collection of Internet applications within a single program. The new

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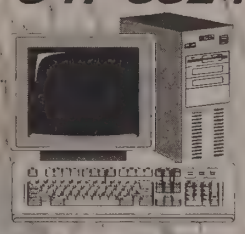

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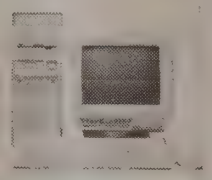

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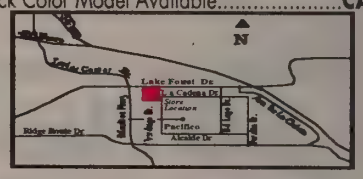

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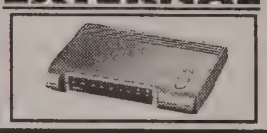

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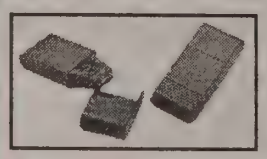

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NetCruiser
NETCOM On-Line Communications Services
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San Jose, CA 95117
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(408)554-8649
info@netcom.com

Mosaic for Windows
National Center for Supercomputing Applications (NCSA)
Download the files README.FIRST, README.BROCHURE from
ftp.ncsa.uiuc.edu

NetCruiser product from Netcom (an Internet access provider) is a good example of how Internet connectivity and applications can be tightly integrated.

NetCruiser runs as a single program that establishes a network connection to one of Netcom's Internet hosts. It provides good graphical interfaces for email, ftp, telnet, WWW, Gopher, ping, and finger, as well as utility support for viewing binary images. The Internet's most popular applications are conveniently at hand, and bundling the applications into a single program vastly improves their ease of use. It doesn't hurt that the relatively ugly business of setting up the connection in the first place is largely out of sight.

The one drawback to tightly integrated packages is simply that they are tightly integrated. NetCruiser is great for making an Internet connection through Netcom. It's not intended to be a general purpose protocol implementation and probably won't do for serial connections to other sites that support SLIP or PPP (your employer's private TCP/IP network, for example).

Tightly integrated packages are an all-or-none sort of affair. They don't easily support alternative or independent versions of the applications they integrate, a fact that makes experimentation more difficult. ■

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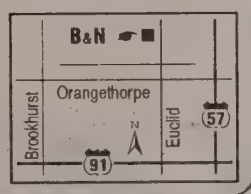

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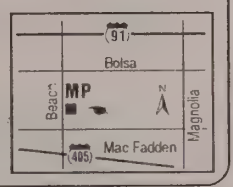

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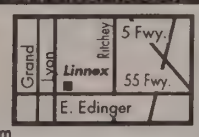

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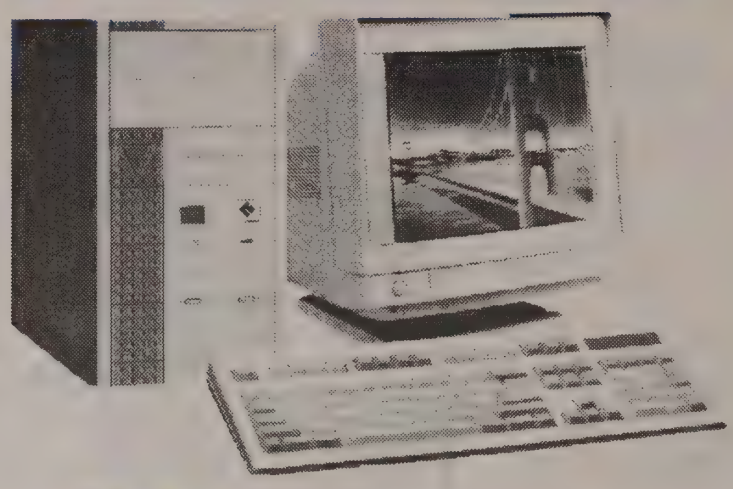

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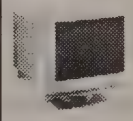

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continued from page 24

Wireless News

•Dauphin Technology, manufacturer of the DTR-1 pen-based and keyboard-based convertible notebook computer, has announced the DTR-1/WAN, an enhancement to the DTR-1 that includes a RAM Mobile Data Wide Area Network (WAN) radio with an extended battery pack. The RAM Mobile Data network is a two-way data packet-switching network, with coverage in over six thousand cities, covering 90% of the urban business population. The DTR-1/WAN is capable of sending data over the RAM Mobile Data network at a rate of 8000bps, using 512-byte packets. Pricing was not available.

The palmtop market is quite mature at this point, with a large installed base and ample software support. The disadvantage of these types of machines is, as always, that DOS was not specifically designed with palmtop computing in mind.

•MagicCAP is a special scripting language and user interface for personal wireless communicators developed by General Magic, an Apple spinoff company. The user interface metaphor is that of a small town, with buildings you can enter which have hallways and rooms inside. The Motorola Envoy is a wireless handheld communicator which uses the MagicCAP system to provide wireless information services. Among these services, America Online has recently announced that it will be available using the Envoy and MagicCAP, via an America Online building in the simulated "downtown" area. Email, news, business, sports, stock quotes, and portfolio information will be available via the America Online service using the Envoy. In addition to the usual features, online support will be available for the Envoy and MagicCAP platform via email, the General Magic online area, and a newly created Motorola online area.

•Traveling Software, Inc. and National Semiconductor Corporation have jointly

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The San Diego Computer Fair is cosponsored by the San Diego Computer Society and *ComputorEdge* Magazine.

Solutions

produced a combination of hardware and software called LapLink Wireless with AirShare which will synchronize files between a portable computer and a desktop PC using a wireless connection. For example, you might edit some files on your organizer, palmtop, or laptop computer out in the field, and when you get back the unit will automatically detect the changes and synchronize the files in a manner pre-specified by the user. No need to hook up cables or even activate the software; just by having both machines turned on and walking close by your desktop computer, LapLink Wireless will detect the connection and automatically synchronize your files.

Newton News

The Apple Newton news front has been relatively quiet recently. State of the Art, Inc., however, is shipping ExpensePlus, business expense reporting software for the Newton MessagePad technology. ExpensePlus allows you to quickly and easily track expenses by clicking on one of twelve predefined spending category icons. For example, to record a dinner expense, click on the "dinner" icon and write in the expense. The program can prepare summaries and expense reports, and print, beam, or fax them for review. The suggested retail price is $139.95 on disk and $159.95 on a PCMCIA card.

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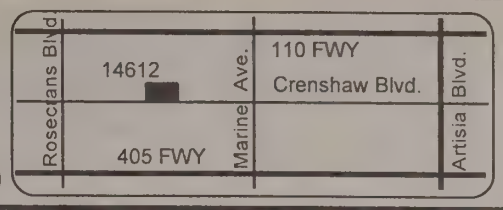

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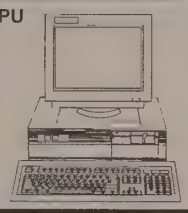

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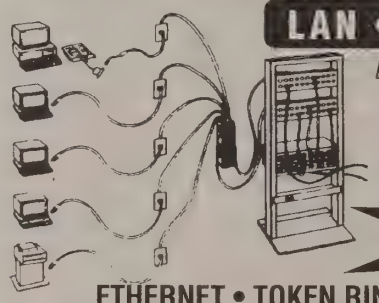

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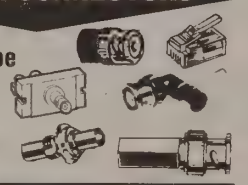

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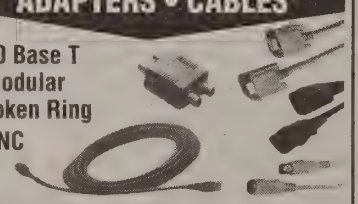

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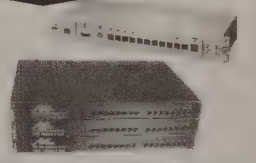

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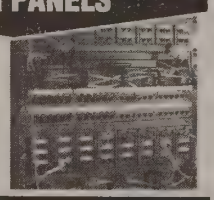

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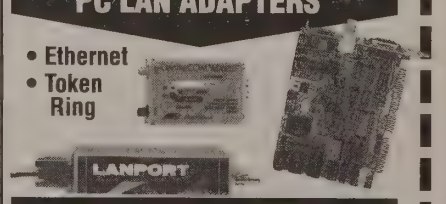

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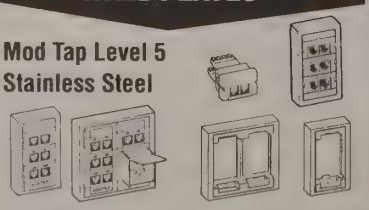

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More PCMCIA Devices

•A number of palmtop computers, including the popular HP-100LX, have only one PCMCIA slot; in this case, if you want to have both RAM and a fax/modem card at the same time, you're out of luck. This is particularly important in a machine like the 100LX, since by itself the machine doesn't have enough RAM to receive a fax; you need an expansion card. However, if the expansion card is present, you cannot use an internal fax modem; you have to use an external fax modem, which can be bulky and requires carrying around an extra piece of hardware.

SMART Modular Technologies has created the Fax/Memory Combo Card which combines a 2MB (or 4MB) Flash RAM card with a 2400bps data/9600bps fax modem in one Type II PCMCIA card, obviating the need for an external fax modem; you can carry all the functionality you need in a single device. The card draws a current of 2mA when in "sleep" mode. The card retails for $349 in the 2MB version, and $449 in the 4MB version.

•Protege Corporation has created a low-cost, high-performance device intended to allow PCMCIA-ATA flash disk or rotating hard disks to be accessed from any 16-bit ISA DOS computer. Retailing at $99.95 for an internal unit which fits in a 3.5" floppy drive bay, the device is cheaper than alternative technologies I've seen so far; and it is also different in that it comes with its own interface card which allows high-speed access. Some other similar units use the parallel port as an interface (which means they are limited to slow parallel port data transfer rates), and are often more expensive as well.

The ATA/X, as it is called, supports both PCMCIA-ATA Type II Flash Cards (as I understand it, not all flash RAM cards are ATA-compliant, so be careful), and Type III 1.8" hard disks, including some cards from SunDisk, Epson, and Western Digital. The unit enables "hot" insertion and removal of cards, which means you can insert and remove the cards without turning off the computer first. An external version is available for $179.95.

•IBM has announced a line of high-capacity solid state mass storage cards, ranging from 3 to 20MB in PCMCIA Type I form factor (the thinnest) and from 30 to 40MB in a Type II form factor. No firm price was announced on the cards, but IBM says the higher-capacity cards will be available to OEMs for less than $25/megabyte, which puts the 40MB card in the under-$800 price range for OEMs.

•Megahertz Corporation is releasing an aggressively priced $259 PCMCIA Ethernet adapter, considerably cheaper than other PCMCIA Ethernet adapters I have mentioned in previous columns. The adapter supports Novell NetWare, Microsoft LAN Manager, IBM LAN Server, Banyan Vines, and other protocols. Both a 10BaseT and a 10Base2 version is available.

•For portable computer users who might need to connect their computer to different networks during the course of their travel, a dual-connector (10BaseT and 10Base2) PCMCIA Ethernet card could be quite useful. Socket Communications, Inc. has produced a $369 high-performance PCMCIA Ethernet adapter, the EA+, which supports both 10BaseT and 10Base2 connectivity in a single card. The EA+ also supports the Microsoft Plug-and-Play BIOS, which will be provided by Chicago, for those portable computers that can run Chicago (a.k.a. Windows 4.0) in the future. The EA+ also has an NE2000 emulator, which allows it to be easily used by almost every known network operating system. ■

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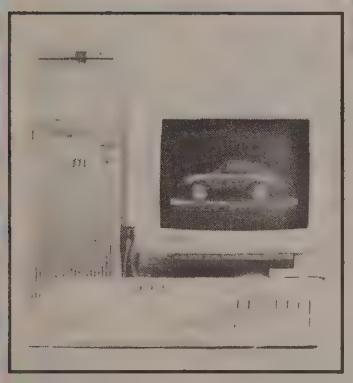

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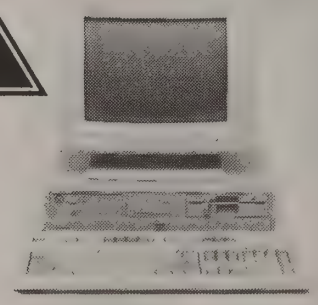

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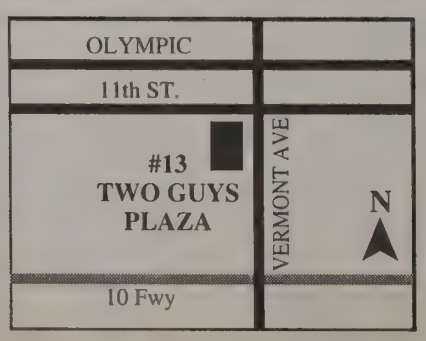

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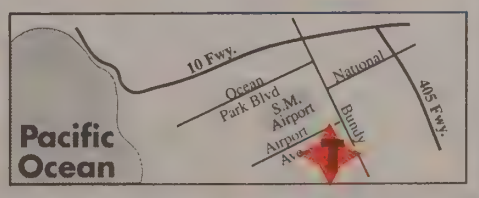

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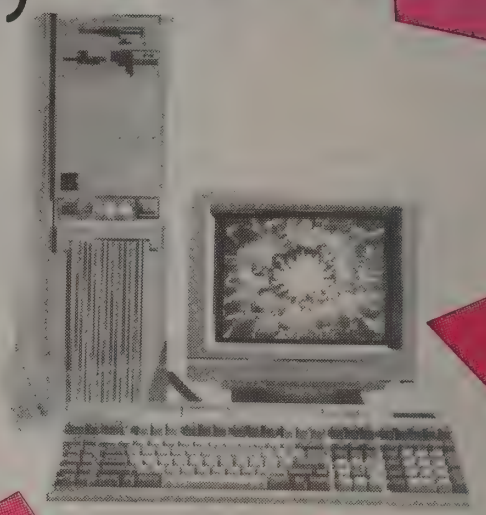

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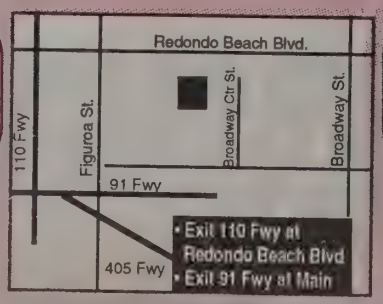

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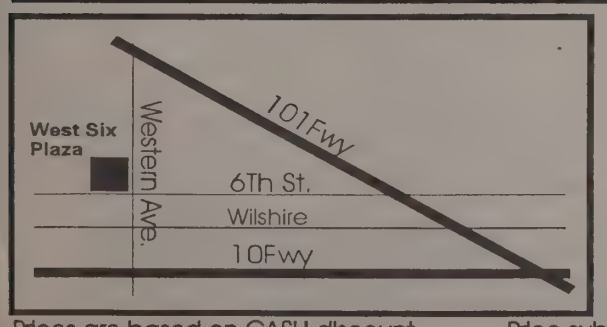

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- Super VGA Graphics
- 14" SVGA 0.39dpi Monitor
- IDE / IO Interfaces
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- 101-key Enhanced Keyboard
- 3-btn. MS-compatible mouse
- FCC / UL / CSA Approved

BudgetStretcher! 66

VESA Local Bus 486SLC-66 $959

Same as above except CPU is the IBM 486SLC2-66MHz.

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- Award BIOS
- 128KB External Cache
- 210MB IDE Hard Drive
- 1.44MB x 3.5" Floppy Drive
- Cirrus 5428/1MB Graphics
- 14" SVGA 0.28dpi Monitor
- VL Bus I/O - 2S/1P/1G
- Mini-Tower Case w/220-w PS
- 101-key Enhanced Keyboard
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- FCC / UL / CSA Approved

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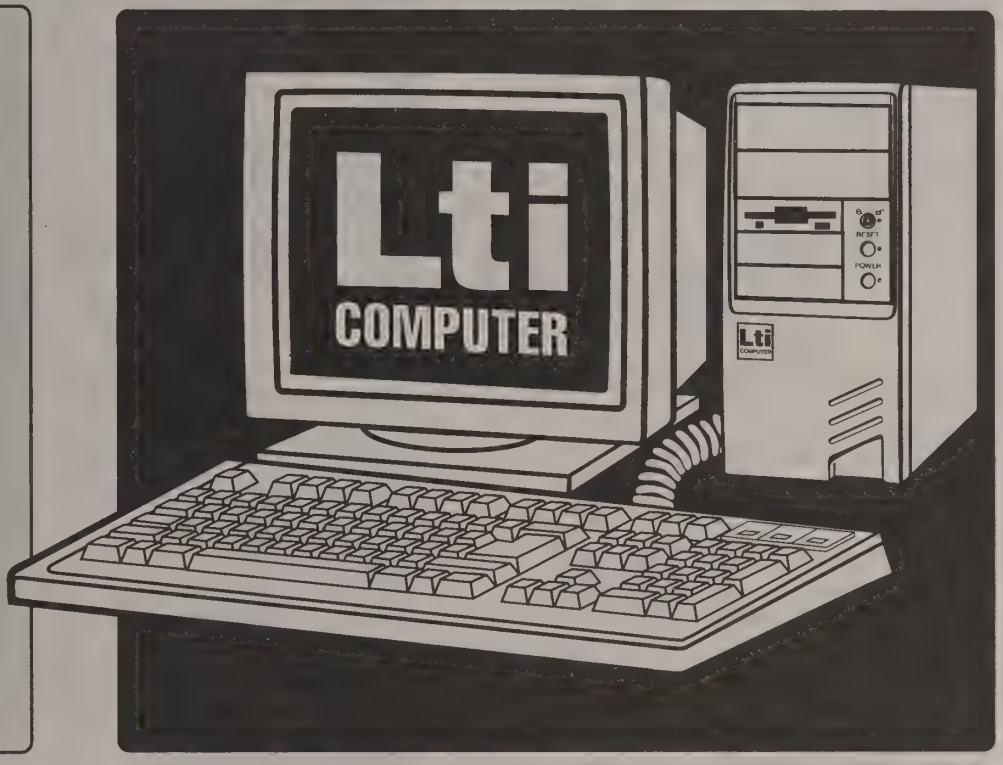

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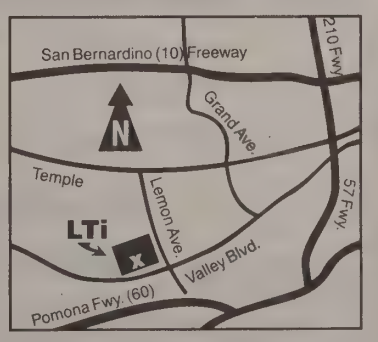

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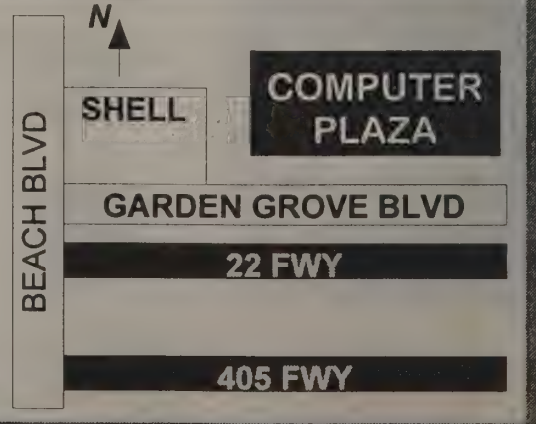

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- 256KB Cache
- 4MB RAM (Exp. to 64MB)
- 1.2 & 1.44MB FDD (3.5" & 5.25")
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MICRO MARKETPLACE

Updating A 386

Case History: Bringing An Old PC Up To Speed

By Ed Kahn

It doesn't seem like that long ago.

I remember making the decision to buy my new 386. I studied the options and decided on a generic 80386 computer with 4MB of RAM, a 60MB hard drive, an 80387 math coprocessor, and a tape backup. After all, my 60MB hard drive was just too big to back up onto floppies. I decided that 20MHz would be fast enough for me. After all, my primary task is writing and I could still do all of the other things I might need to do and check out the software that comes my way.

I loved the box. It was fast and let me run DESQview, my multitasking program that allowed me to switch back and forth between tasks with the push of a few keys.

The system was great, but time moves on. Eventually I was dragged kicking and screaming into the world of Windows. If I wanted to keep current with new programs, I could no longer resist the Windows environment, even though it was slower than my old setup.

Now, it's a few years later and I'm firmly in the Windows camp. I've gradually upgraded my system; when my old hard drive failed, I switched over to a larger drive. But despite all of the little changes I made over the years, I was still experiencing inordinate delays in my work for reasons I couldn't quite figure out. Eventually, I decided it was time to find the bottleneck and remove it.

Cyrix's Single-Chip Upgrade

My first decision was to use Cyrix's new 386 to 486 CPU replacement. I was excited when I first read about the chip, for it meant that I could upgrade to a 486 without replacing the whole system.

Prices vary, but for a 386DX, prices start at $299 list for a 16MHz system and go to $399 for a 25MHz replacement. Currently, there are replacement chips for DX systems running from 16MHz to 33MHz. SX replacement chips are available for machines running from 16MHz to 25MHz, and list prices range from $269 to $299.

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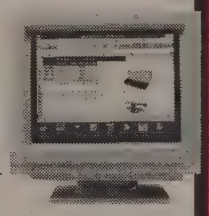

.28 1024 x 768 Interlaced 14"
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- 2S/1P/1G
- 101 Enhanced Keyboard
- 420MB Hard Drive
- Monitor Not Included

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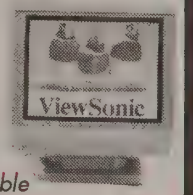

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AMD 486

486DX-40	$203
486DX2-50	235
486DX2-66	274

Cyrix

486DX-33	$159
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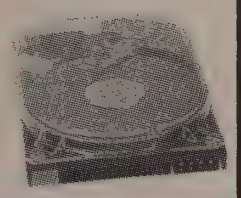

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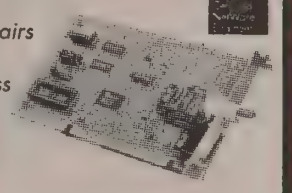

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- AMI BIOS
- 6 Slots
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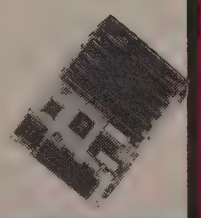

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- Includes CPU/Math Coprocessor
- 128K Cache
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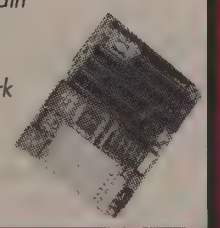

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- 72 Pin Simm to 64MB
- ZIF Socket
- 3 VLB
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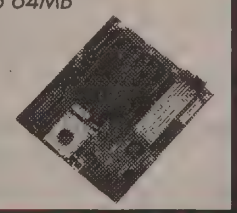

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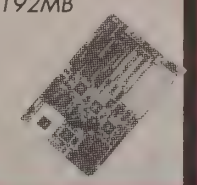

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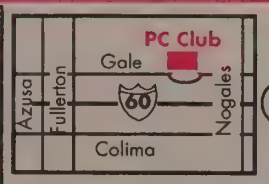

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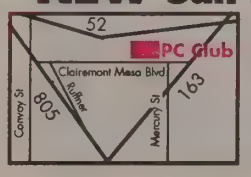

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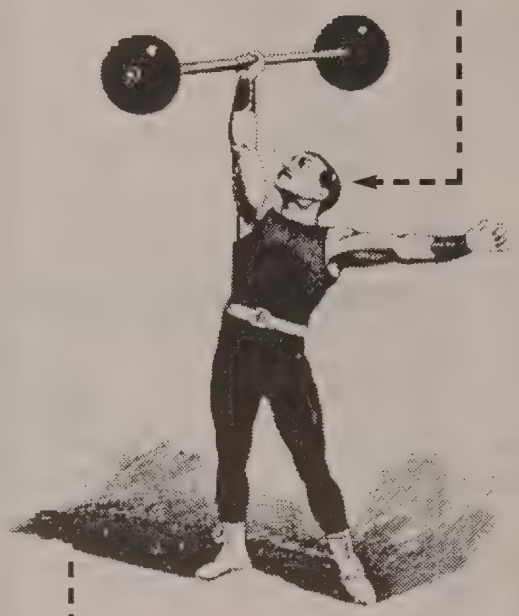

READ

MICROTIMES

Upgrading A 386...

The DX replacement chips will work in virtually any 386 machine. The SX replacement, however, will work only in machines made after about 1991; the Cyrix chip has to be installed on top of the 386SX chip because these chips are soldered onto the motherboard and are not removable.

Installation of the DX chip is simple. Cyrix claims that you can upgrade the system in fifteen minutes, and I found it to be so. It's as simple as removing the 386 chip with the tool they provide and replacing it with the new Cx486DRx^2. Then software is installed to invoke the cache, and you're done. Nothing could be simpler.

After making the swap, my Norton benchmarks indeed indicated that the machine had a 486 CPU and that my old 20MHz system was now running at close to 50MHz. When I ran the benchmark test within Windows, however, the improvement was not nearly as dramatic. The chip improved the speed considerably, but Windows does things that make the speed fluctuate between a higher and lower speed. This, I believe, is due to the nature of Windows, not the Cyrix chip.

Memory Issues

Although I'd upgraded my system to a 486, I didn't see the kind of improvement I had hoped for. First, it still took quite a while for my system to boot. That, of course, is due in part to my hard drive access time, as all of the data has to be transferred from the hard drive into RAM. Within applications like Excel, for example, there was a noticeable improvement in performance; however, the system was not as fast as I wanted.

As I began to make inquiries, I learned that there were two things that would make a dramatic difference. The first was to increase my memory to 8MB. The second was to make sure I had cache memory on the motherboard.

Unfortunately, when I purchased my original system, I didn't think it necessary to spend the extra money for onboard cache memory. I guessed right about my needs when running under DOS, but now that I was using Windows, I needed more. The bottleneck now appeared to be a lack of cache memory, and I simply couldn't add that to my system.

I could add RAM, but my motherboard was old. It would not accommodate onboard cache memory, and it showed a few other signs of aging. First, the 4MB that I did have were SIPP memory chips, a configuration that is no longer used in modern computers; it made no sense to spend more money for memory I wouldn't be able to use in a new system. Secondly, modern motherboards have a couple of slots into which you can insert VESA local bus cards, which are touted as greatly improving performance, especially for video and controller cards.

I phoned around and finally went back to my original vendor, HiQ Computers, from whom I had purchased my 386 system. They recommended I install a new motherboard that would use my Cyrix 486 processor and my old math coprocessor. Their VL-3486EP board sells for $139 and includes 128K of internal cache memory and two VLB slots. For another $30 they will install the board. I found this board met my needs to perfection. I could use my 486 and 387 chips and install up to 32MB of RAM. I put in 8 MB.

A number of excellent motherboards are available, but this model has several features I like, particularly its ability to take either a 386 or a 486 chip. What that means is that if I decide to upgrade my processor to a faster chip in the future—and lots of super fast CPUs are coming to market—I won't have to change the motherboard again. Also, this motherboard will accommodate any speed processor by merely changing jumpers, which means more flexibility for future changes.

After adding onboard cache as well as system memory, I noticed a dramatic change in performance. I wanted to know how much of the change was due to the addition of onboard cache memory and how much was due to the increase in RAM. I tried one and then the other and then both.

Indeed, each of these components contributed dramatically to the difference in performance. I boot up my system with three applications in the startup window. Before the changes, my system took nearly a minute and a half to load Windows and the applications. After the

continued on page 172

RESOURCES:

ATI Graphics Ultra+, $299
ATI Technologies Inc.
33 Commerce Valley Dr. East
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Canada L3T 7N6
(905)882-2600

Cyrix Cx486DRx^2, $299–$399
Cyrix Corporation
2703 North Central Expwy.
Richardson, TX 75080
1-800-462-9749

Viper Board, $499
Stealth Pro Board, $449
Diamond Computer Systems, Inc.
1130 E. Arques Ave.
Sunnyvale, CA 94086
(408)736-2000

HiQ VL-3486EP motherboard, $139
HiQ Inc.
740 N. Mary Ave.
Sunnyvale, CA 94086
(408)245-5836

DC 4000 Controller, $99
Cache Controller (without memory)
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1460 Koll Cir.
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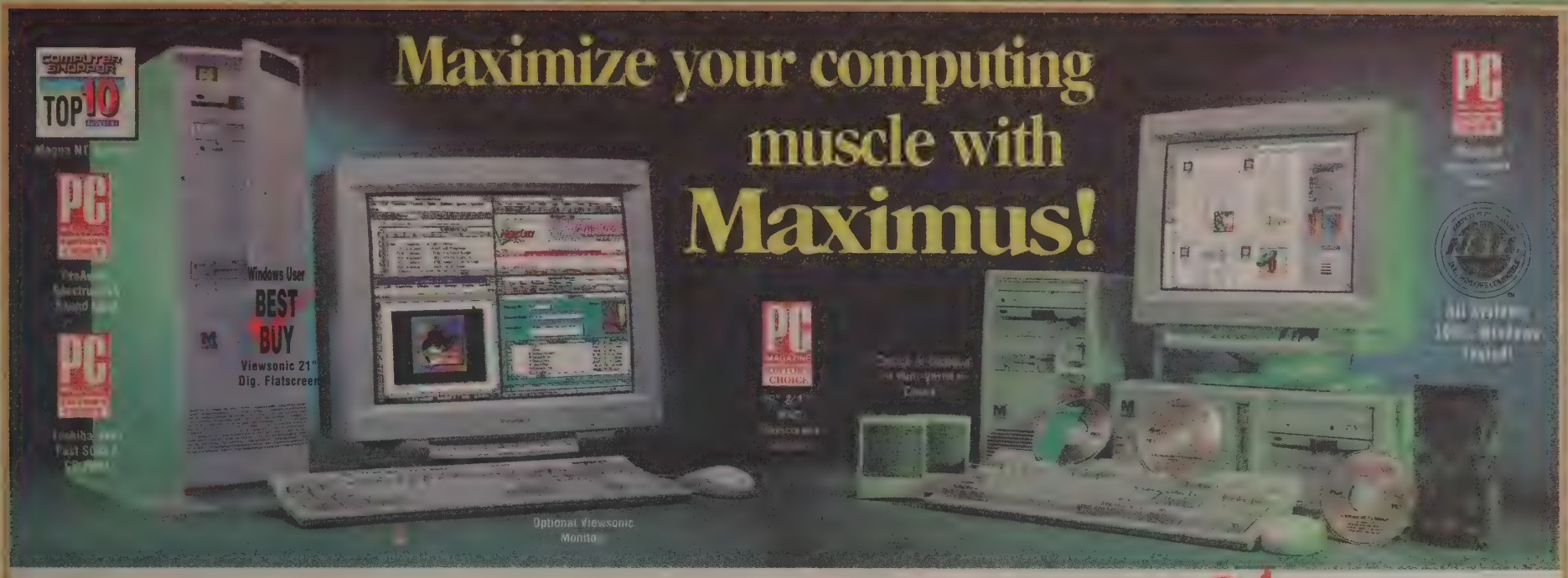

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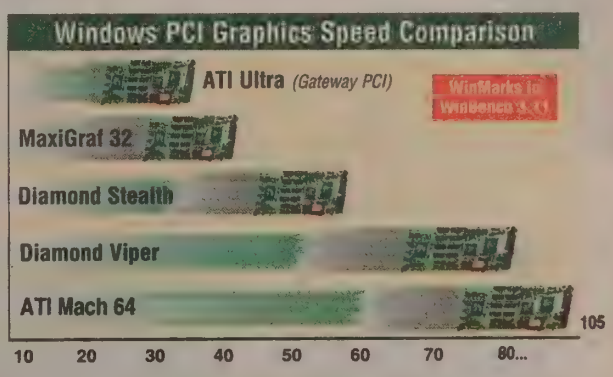

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PLANNING FOR GLOBAL SUCCESS

DASAR'S ALEX VIEUX ON INTERNATIONAL BUSINESS STRATEGIES

BY MARY EISENHART
PHOTOS: ANNE KNUDSEN

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AND EVERYONE IS GETTING INFORMATION AT THE SAME TIME.

> "When you have a product that has been anointed in the US, it has much more appeal than a product which is very good but developed in Europe. So people always think in terms of 'how can I go to the US?' and they always fear the toughness of the American market."

It's very important to understand that what you do today will have an impact in France, will have an impact in Spain, will have an impact in Japan.

"So it's very important to build a company from day one with the concept that you will have to have someone talking to a guy in Bruges or Nice as quickly as to a guy in Nevada."

DASAR Inc., the Palo Alto company of which Vieux is chairman, is in the business of connecting everybody to everybody else in the computer industry, from the CEO to the first-time buyer—globally. Says Vieux, "We're trying to link people. We're the international linking group."

Son of a French diplomat, Vieux was bitten by the Silicon Valley entrepreneurial bug when he came to study at Stanford. "When I arrived in California almost ten years ago, I had heard about Silicon Valley, but I didn't know about the reality. I started realizing the importance and the breadth of knowledge we could get out of Silicon Valley.

"I spent several years of covering Silicon Valley as a journalist for *Le Monde*, which is like the *New York Times* in Europe."

In the course of his job, Vieux had occasion to meet many industry figures, and to attend the various high-tech summits put on by Dick Shaffer, Esther Dyson, and Stewart Alsop. "One day it struck me that all those industry executives were talking to the other executives in the US, but few of them were talking to the other executives in Europe. So," he thought entrepreneurially, "why don't I try to bring together computer leaders from the US and Europe, and bring together the computer industry?

"At the same time, I realized that many people in Europe feared what was going on in Asia, particularly in Japan. And I thought, why don't we do a forum where everybody can talk to each other, across the world, from three continents? So the idea of ETRE [European Technology Roundtable Exhibition] was born."

This September brings the 1994 version to Barcelona, along with the premiere of Informat, a complementary trade show. A high-level conference attended by most of the US industry's movers and shakers, ETRE (along with its Asian counterpart, ATRE) dispenses information and provides ample networking opportunities for international ventures. Vieux happily rattles off a litany of ETRE-born deals—IBM's acquisition of Parallan; the US IPO for Business Objects; Gupta entering the Italian market thanks to a conversation with Olivetti's vice chairman.

"By being open to new ideas, and by going to Europe to meet with European entrepreneurs, those CEOs and those business decision makers ended up doing deals that they would not have done otherwise.

"We're a catalyst, an international catalyst. Why is that important? It's important because 50% of the business of the US computer industry is outside of the US. And how are you going to be able to do business in the US if you don't take into account 50% of your market?"

DASAR's latest project is a global user satisfaction survey.

"The user who uses Borland Office or an IBM ThinkPad is the same whether he's in Scotland or Scotts Valley," says Vieux. "So we wanted to be sure that we knew and understood what they like in the products globally.

"Why do they like the product? Is it because it's well installed? Is it because it's not expensive? Because they like the advertising? Because the sales guy is good? We wanted to know that from a Japanese viewpoint, the Taiwanese viewpoint, the Indian viewpoint, the Scandinavian and American viewpoint."

Drawing from a variety of sources and methods—CompuServe, direct mail, telemarketing, and trade shows around the world—the survey will poll five thousand users. The data will ultimately be marketed to industry vendors, but the winners of the user satisfaction survey will be announced in September at ETRE/Informat.

"Amazing" recurs frequently in the conversation of Vieux, who's clearly enjoying the adventure, jet lag and all. "To a French kid coming to this country, it's a great entrepreneurial venture, to start out of nothing and to get this idea—and then when you call someone in Portugal or Russia, the person tells you, 'Oh, you're the ETRE guy!' It's a great pleasure." (DASAR Inc., 415/321-5544, fax 321-5597.)

WHAT ARE YOU TRYING TO ACHIEVE WITH ETRE?

When we started out in 1990, we had a few parameters: to have an international conference, to have the top leaders, to have as many countries represented as possible, to have content as well as networking opportunities. For the content side, we invited a number of journalists with whom I'd rubbed elbows at press conferences. So we put together a conference program that was a similar quality to what the best conference organizers do in the US.

We decided that we needed be sure that we incent all the executives from Europe to go and meet with their counterparts, so that they don't fear these American CEOs—they see that they are human beings like them, and don't see them as demigods and semi-heroes. In the same way, the people from the US see the other people who are really doing the business in Europe—the distributors, the market makers, all those people. The results are there.

We decided to limit it to a CEO-only conference. We could have invited a lot of VP-Europe and directors of international operations, but we kept it very selective. It seems that it worked—people wanted to hear the story straight from the horse's mouth and wanted to talk to the highest decision maker from a company.

We realized last year that we wanted the formula to be really alive. Those people were coming back—we have a 70% return rate—but we wanted to have something new.

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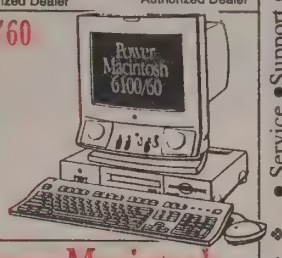

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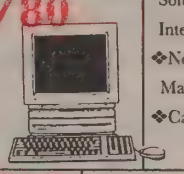

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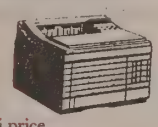

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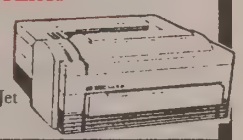

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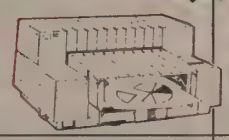

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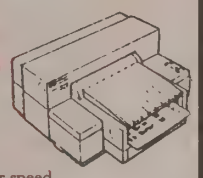

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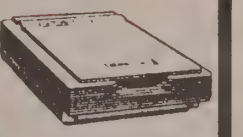

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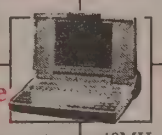

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industry? We wanted to invite the top CIOs of Europe—the head of the computing department of Mercedes-Benz, of Fiat, of Renault, of Bank of Italy, of Bank of Spain, of Saab, of Lloyds of London. We wanted to have all those people to see those CEOs who are coming and who have so much impact on their daily lives.

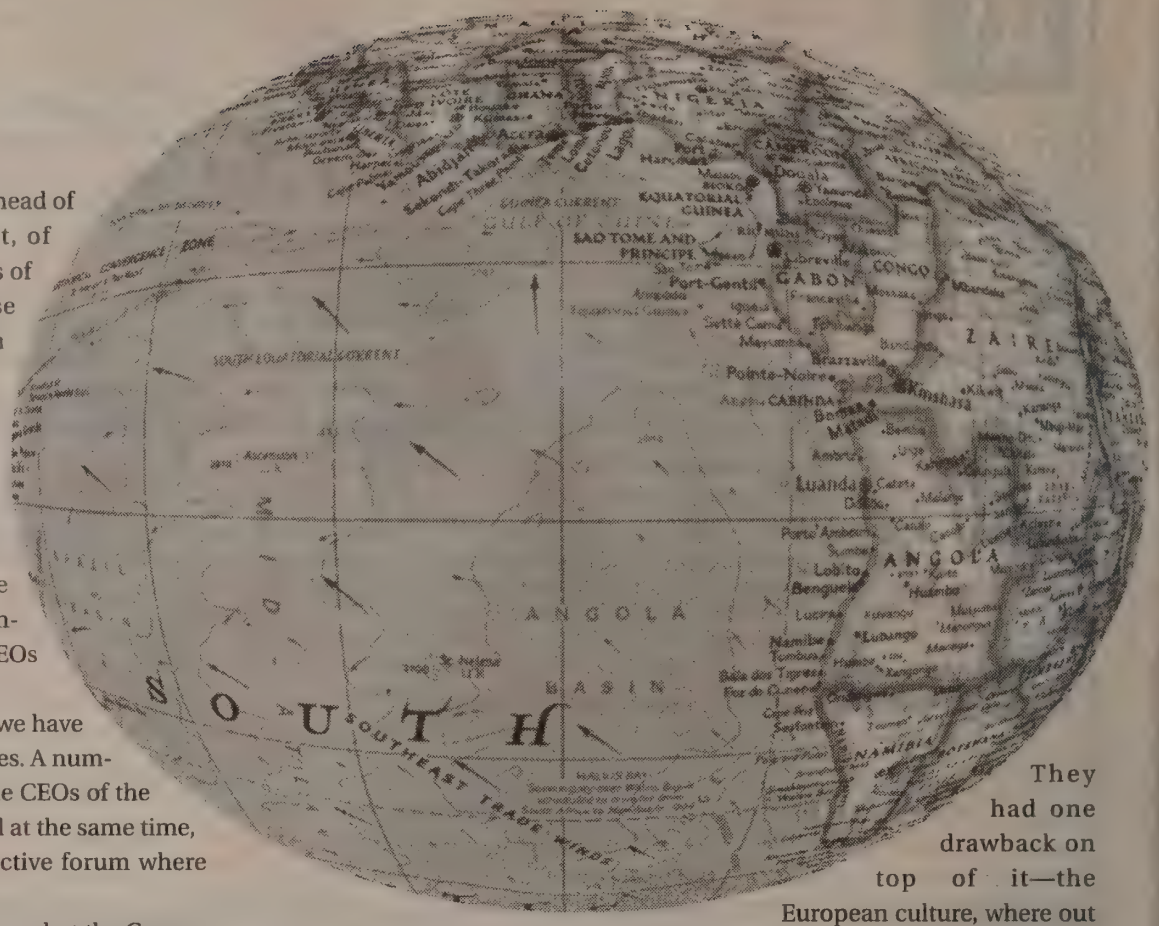
We tried to put together a forum and we saw there was an advantage to having not only a conference where people could talk to each other, but also a trade show. So we conceived Informat.

We have ETRE, where the industry speaks to the industry. We have Informat, a global conference program where we have all the CIOs who are coming from seventeen countries in Europe; we're going to meet with three hundred CEOs coming from the US and Europe.

We have a trade show and a global conference program; we have editors coming from all over Europe to moderate roundtables. A number of CIOs will be speaking about their experience, and the CEOs of the companies that provide products will listen to the CIOs, and at the same time, the same roundtable, they'll be speaking. We're an interactive forum where users and suppliers are going to speak with each other.

The concept behind it was to do for the computer industry what the Cannes film festival has done for the movie industry. The dream is coming true—we have industry talking to industry, and industry talking to the volume buyers. There's a communication side and a commercial side.

Europe needed it—a trade show which was also very unconventional.



HOW WOULD YOU CHARACTERIZE THE INDUSTRY IN EUROPE?

The industry in Europe is paradoxically very lively and at the same time in crisis. It's lively because there's a lot of creativity and a lot of great engineers in Europe. Every software vice president in America will tell you he'd like to hire the guy who did NextStep for Steve Jobs. And there are so many of those!

Because of the incredible training in the schools and the creativity that is facilitated in the engineering schools of Europe, people have great ideas about how to write software. It has always been a habit to say in engineering school that you write software the same way people in literature write novels. People have that fever to go out and create something.

But at the same time we've been totally unable to create a market for ourselves, and to have products which are well marketed in Europe. Only a few entrepreneurs succeed as businesspeople in Europe, either because they get into the European habits or the European culture or they're frustrated by the frontiers and boundaries between France and Germany, or France and Spain, and so forth. Or because they don't know how to break into those markets.

And last but not least, when you have a product that has been anointed in the US, it has much more appeal than a product which is very good but developed in Europe. So people always think in terms of "how can I go to the US?" and they always fear the toughness of the American market.

But those companies that have done it, like Business Objects and Neuron Data, and all the entrepreneurs that have taken the risk, like Philippe Kahn and Jean-Louis Gassée, to break the mold and to come here—when they go back there, they are heroes. There is a model where you start in Europe, for creativity's sake; you come to the US to get anointed, and go back to Europe to get some money. If you don't do that, it won't go anywhere.

The large corporations in Europe have failed. It's not that they're not good, but they have failed. Bull, Siemens, Olivetti, who are big players in the computer industry, have not been able to adapt with the swiftness and dynamism of the computer industry in the US. The rate of change every six months is not adapted to the ways these companies are run. They were run like the IBMs and Digitals. They had one drawback on top of it—the European culture, where out of every six months you had one month of vacation, so you're losing 15% of your time. You're playing 85% of the game. It's like football—you have to sweat as much as the other team to get your yards, and people didn't do that, didn't understand that the rule of the game is that this industry has become extremely global.

One thing that I've been fighting for is to explain to people that the brain has no flag, and creativity has no flag and no country. The thing that's amazing in this industry is that when you're good, you work hard, you're really perseverant, you know the processes, you know how things work—you succeed. It doesn't take more than that, but it doesn't take less than that. Sweat hard, work hard, it happens.

SO IN TERMS OF THAT—YOU TALK ABOUT THE CONFERENCES BEING AIMED AT CEO-LEVEL PEOPLE. WHERE DOES THAT LEAVE THE STRUGGLING ENTREPRENEUR? IS THERE ROOM FOR THE SMALL START-UP HERE?

Absolutely. Yesterday an Italian entrepreneur based in Silicon Valley called me and said, "I want to have a chance to access those bigshots." I tell him, "Hey, I have a program for you."

We give them some help. We don't charge them as much as we charge the Microsofts or the Borlands or the IBMs, because they can't afford it. We try to be sure that it happens.

I do believe in longevity, and longevity in this business really means helping entrepreneurs. To help the establishment—they don't need me. Microsoft doesn't need me to meet with anybody they want. On the other hand, the small entrepreneur, the medium-sized company, which does not have access, which is based in Hungary—how many of them *never* get the chance to meet with Bill Gates?

This Finnish company last year spent thirty-five minutes with Gates talking about their product last year, and at the end Gates gave them the name of a person in Redmond. They talked to this person, and now Microsoft is integrat-

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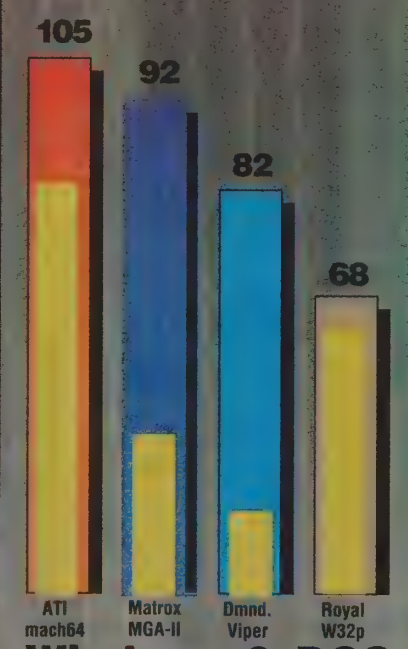

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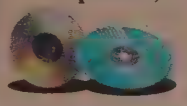

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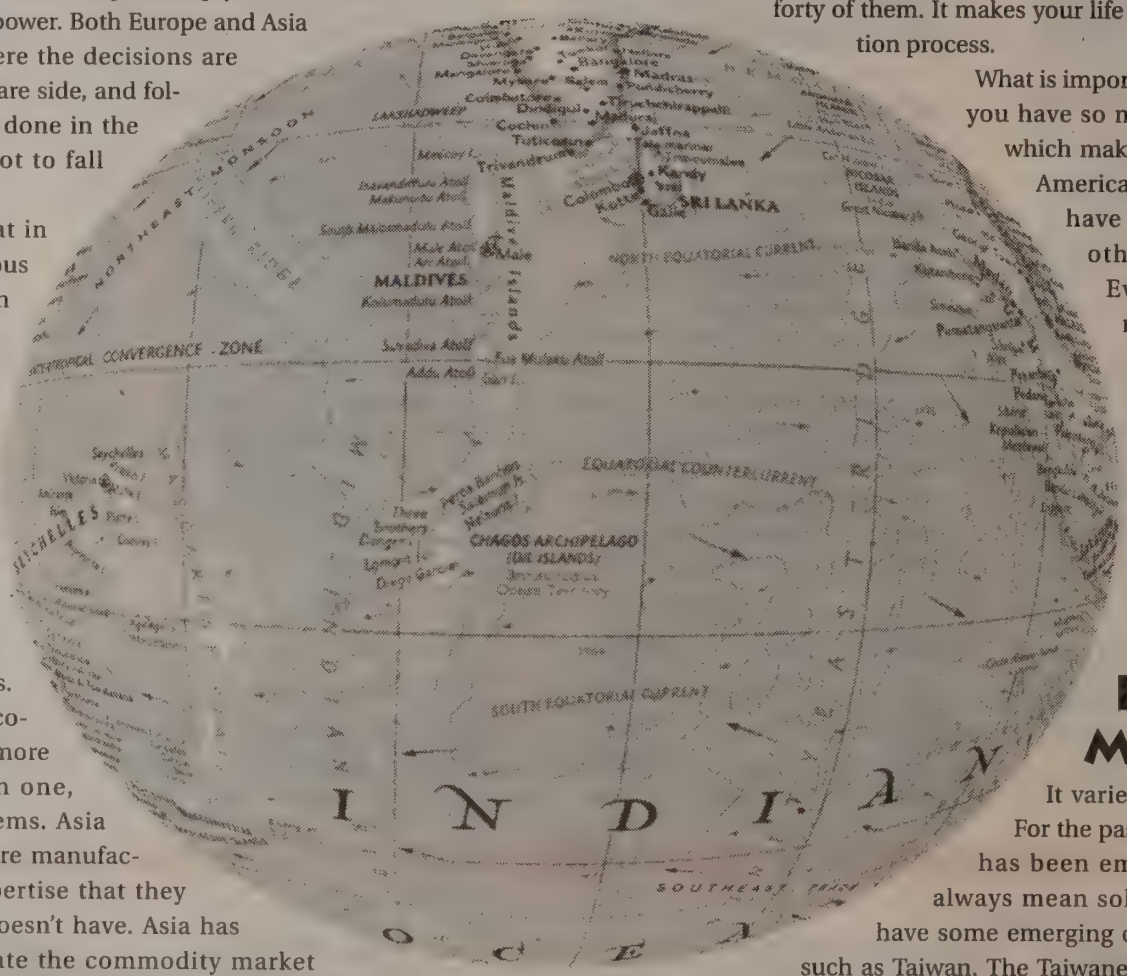
YOU HAVE A CONFERENCE IN EUROPE AND A CONFERENCE IN ASIA. HOW WOULD YOU DESCRIBE THE DIFFERENCES IN THE INDUSTRY IN BOTH PLACES?

They're very different. The overlap is simply the remoteness from the decision-making power. Both Europe and Asia are very remote from where the decisions are made, at least on the software side, and follow eagerly what is being done in the US. They're very eager not to fall behind.

What is different is that in Europe you have the famous six weeks vacation, and in Asia you don't have that.

In Asia, you need to differentiate among the countries. Japan will become a power in the software industry.

Asia has a lot of financial power, which Europe doesn't have. Asia has a bigger market tomorrow than Europe has. Asia has an underlying economic structure which is more solid than the European one, which has a lot of problems. Asia has a tremendous hardware manufacturing capability and expertise that they have built, that Europe doesn't have. Asia has this eagerness to dominate the commodity market which Europe has never been good at. Europeans are always good at doing Yves St. Laurent; they are not good at doing Levi Strauss jeans. That's a problem. We are able to market quality and high-end things; we are not good at marketing for volume, where processes are as important as the content.



WHAT'S THE VALUE OF THE CONFERENCE FROM THE STANDPOINT OF THE AMERICAN ENTREPRENEUR?

Why should someone go to a European conference where they have to pay a couple of thousand dollars, plus the tickets, plus taking a few days off, to go to Europe to hobnob with three hundred US executives and sometimes two hundred European executives?

The great advantage is that if you want to know the European infrastructure, you don't have to go from Paris to London, from London to Munich, from Munich to Madrid, and from Madrid to Copenhagen. You do that under one roof, at one place. At our conference, you have everybody in the European infrastructure. It's amazing cost optimization. You save a lot of time, a lot of money, a lot of effort.

The second thing is that there is a lot of information gathering, there's a lot of content. So you learn what is hot in Europe, what are the countries that are waking up to the new markets, and what are the distribution channels and networks that you would not have tapped if you had not come.

More important—if you go to Europe and you have to spend one or two days in Switzerland, and one or two days in Germany, you may meet with four or five or six people who are part of the distribution infrastructure or the OEM infrastructure or the vendors who exist there. When you go to ETRE, you have a bigger choice. It's more open than if you made five appointments and had to choose which of the five is going to carry your product. Now you have thirty or forty of them. It makes your life easier, and it's a better selection process.

What is important also is that paradoxically you have so many young American firms which make deals in Europe with other American firms that they would not have done had they gone to the other conferences in the US. Everybody is over there on neutral ground, and nobody comes with a status-conscious approach. They're all foreigners on neutral soil, and they start working with each other better.

WHAT ARE THE EMERGING MARKETS?

It varies from one year to another. For the past three years Eastern Europe has been emerging; emerging doesn't always mean solvent. Whereas in Asia you have some emerging countries which are solvent, such as Taiwan. The Taiwanese market is becoming good for software, and the copyright protection is getting better. Korea is becoming a good country to do things, and countries like Singapore are becoming good users of products. The biggest emerging market today in Asia is China.

Asia has a big pool of talent of engineers that we see here. I was in India in December, and I talked to four hundred CEOs of software companies. They are not small companies, they have one or two hundred people. Contract programming houses and package goods programming. I was absolutely amazed—I had heard that they were all body-shopping kinds of things, and this is not the case.

Brains have no boundaries. Those guys know. They have brothers, cousins, friends who are engineers who went to Berkeley and are working at Sun or Oracle or elsewhere, so they know better. They know that body-shopping is going away.

Continued on page 123

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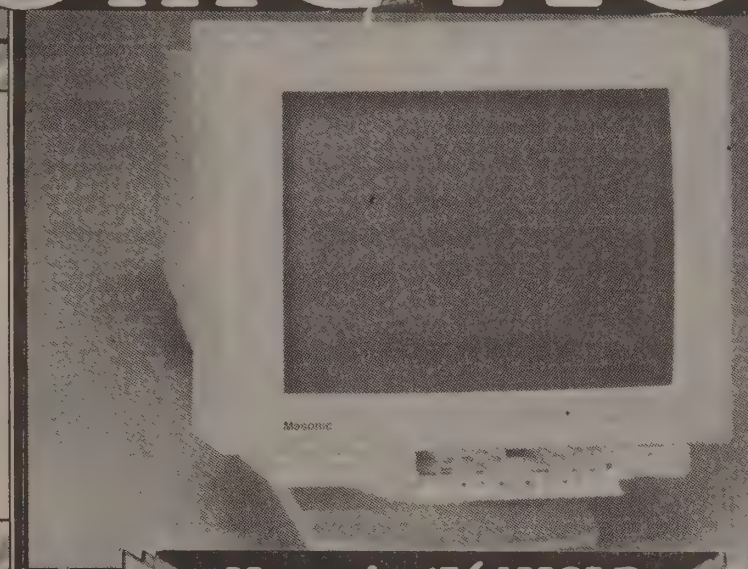

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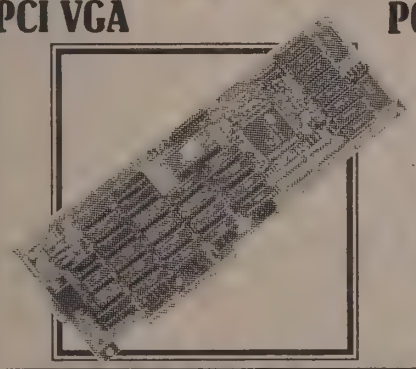
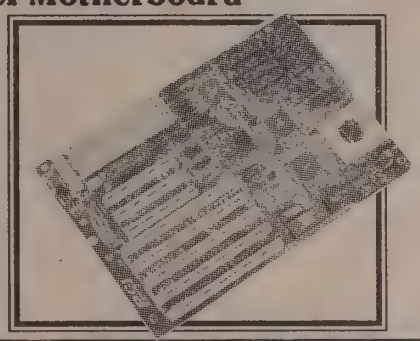
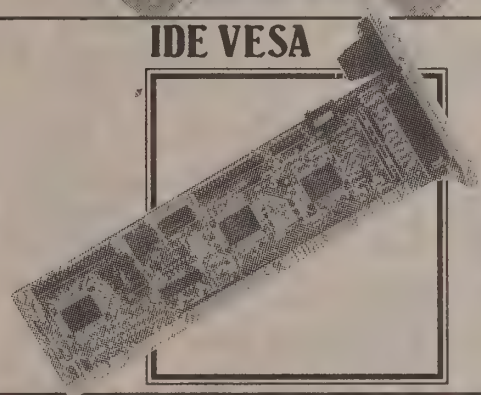


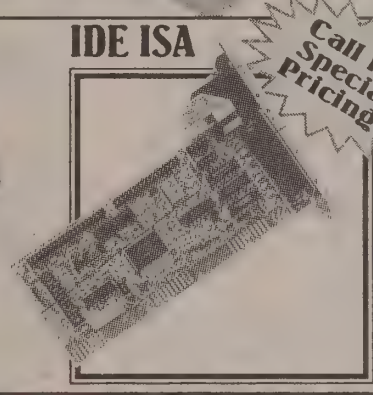
PCI Motherboard



IDE VESA



IDE ISA



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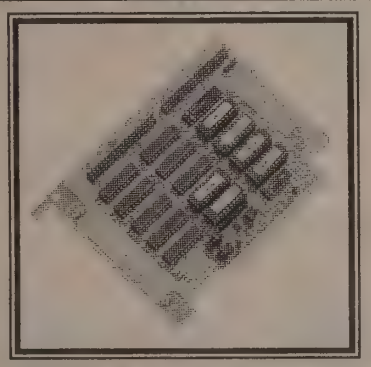
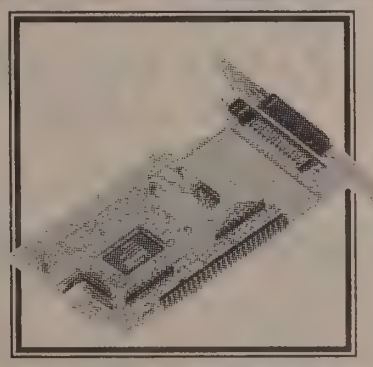
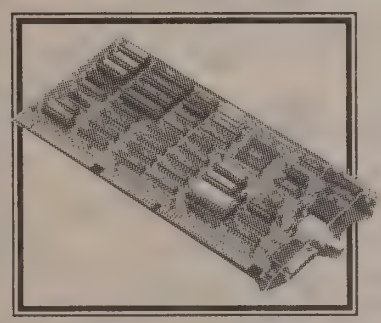


PCI SCSI

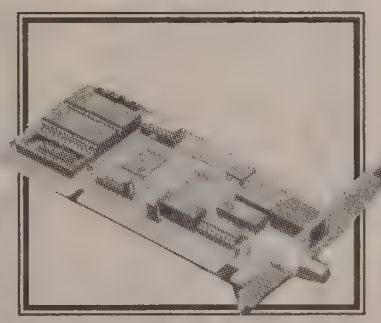


Network Card

VESA



ISA



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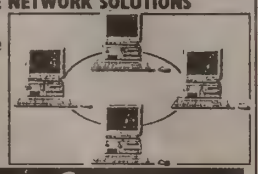

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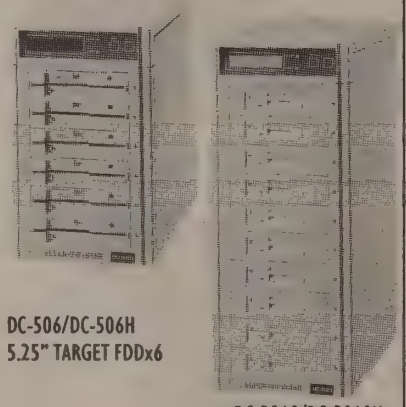

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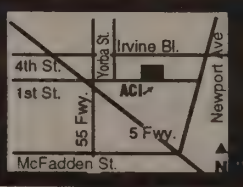

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Product Spotlight

UPDATES

• **AimTech** released **IconAuthor 5.1 for OS/2** software that lets users create interactive applications including computer-based training programs, performance support systems, and self-service kiosks. AimTech Corp., 20 Trafalgar Sq., Suite 300, Nashua, NH 03063. (603)883-0220.

• **Attain** released **In Control 3.0**, its Macintosh-based planner and organizer software. Version 2.0 users can upgrade for $34.95. Attain Corp., 48 Grove St., Somerville, MA 02144. 1-800-925-5615.

• **DayStar Digital** announced special pricing on its **Turbo 040** bundled with a 128K cache, saving users $100 off the cost of purchasing the two products separately. DayStar Digital, Inc., 5556 Atlanta Highway, Flowery Branch, GA 30542. (404)967-2077.

• **DeltaPoint** released **DeltaGraph Pro 3 for Power Macintosh** computers. The product upgrade, v3.1, is optimized for Apple Computer's new generation of Macintosh computers. DeltaPoint, Inc., 2 Harris Ct., Suite B-1, Monterey, CA 93940. (408)648-4000.

• **Disk Software** announced **TG-CAD Professional v5.0**, for Windows and DOS, an upgrade to its CAD/CAM/CAI developer's kit. Disk Software, Inc., 109 S. Murphy Rd., Plano, TX 75094. 1-800-635-7760.

• **FuzziWare** announced the July release of **FuziCalc v1.5**, its fuzzy number modeling tool. Registered users of any previous FuziCalc version may upgrade for $39.95. FuzziWare, Inc., PO Box 11287, Knoxville, TN 37939. 1-800-472-6183.

• **MapInfo Corp.** released **MapInfo 3.0**. MapInfo Corp., One Global View, Troy, NY 12180. (518)285-6000.

• **Mustang Software** introduced **Qmodem for Windows 1.1** communications software, adding improved fax capabilities. Current users can download a free upgrade by dialing MSI's headquarters BBS at (805)873-2400, or from MSI's Support Forum on CompuServe, GEnie, and AOL. A new set of disks can be purchased for $23. Mustang Software, Inc., 6200 Lake Ming Rd., Bakersfield, CA 93306. (805)873-2500.

• **ParcPlace** introduced **ObjectBuilder 2.5**. The new release allows C++ developers to encapsulate off-the-shelf, non-ObjectBuilder-based XT building blocks and use them to construct a user interface for C++ based applications. ParcPlace Systems, Inc., 999 E. Arques Ave., Sunnyvale, CA 94086. 1-800-759-7272.

• **SoftArc** released **FirstClass 2.5**, its cross-platform communications software offering extra mail functionality and connectivity to databases. SoftArc, Inc., 1902 Ridge Rd, #325, W. Seneca, NY 14224. (416)299-4723. Email: sales@softarc.com .

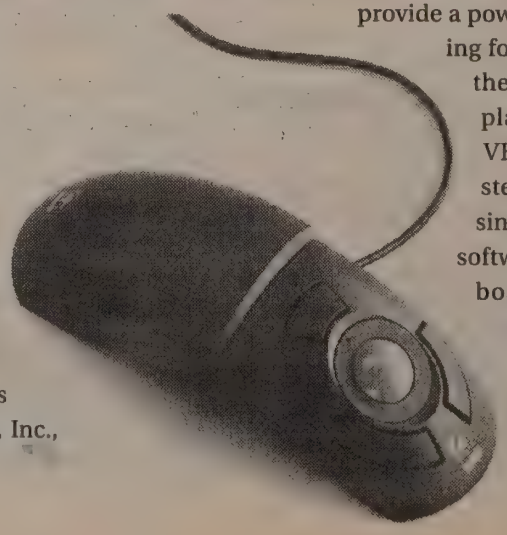
• **Symantec** announced **ACT! for Windows 2.0**, the latest version of its contact management software. Version 2 now includes complete network support, integrated email support, and enhanced calendar and address book printing. Current users can upgrade for $69.95. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 1-800-441-7234.

New Products

Laptop Peripherals

Logitech TrackMan Voyager

TrackMan Voyager is a highly versatile trackball for portable computers. It is ideal for users who do not have a pointing device included with their laptop, as well as for those who have an integrated device but find it uncomfortable for long work sessions. Voyager's small form factor and integrated protective cover make it easy to carry with you, while its ergonomic design makes it comfortable for the hand over long periods. To make setup and use easier, it can be used without an attaching device securing it to your system. Logitech also provides the latest version of its Enhanced MouseWare software, v6.4, which has been optimized for use with this product. The software allows portable trackball users to easily adjust the cursor speed and directional orientation of the trackball and to set Voyager's three buttons to individualized functions. ($89.95) Logitech, Inc., 6505 Kaiser Dr., Fremont, CA 94555. (510)795-8500.



PC Hardware

Number Nine GXE64

The Number Nine GXE64 combines a powerful 64-bit local bus DRAM graphics accelerator and the easy-to-use HawkEye for Windows utilities to provide a powerful solution for mainstream Windows users looking for super-fast graphics with an easy way to fine-tune the colors, resolution, and refresh rates of their displays. The upgradable card is available in PCI and VESA VL-bus. This card is installed in a few easy steps: plug in the board, insert a diskette, and run a single setup file to automatically install the optimized software drivers. Number Nine offers a 24-hour bulletin board service that contains driver updates, useful graphics programs and files, technical support, conference messaging, and late-breaking product line and industry news. ($249) Number Nine Computer Corp., 18 Hartwell Ave., Lexington, MA 02173. (617)674-2919.

continued on page 101

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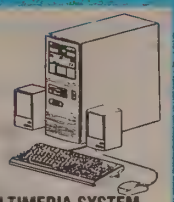

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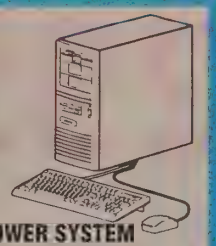

PRESARIO 666 340MB MINI TOWER SYSTEM

486DX2-66MHz CPU • 340MB Hard Drive • 4MB RAM expandable to 56MB • Dual Floppy DriveLocal BUS video graphics • 5 ISA expansion slots • Mouse • 5 drive bays • Internal fax/modem Supports Intel OverDrive processor with Pentium technology Preinstalled software: MS DOS • TabWorks MS Windows Workgroups Microsoft Works Delrina WinFax Lite Prodigy • America On-Line Microsoft Entertainment Pack Symantec Games Pack • **Monitor not included**

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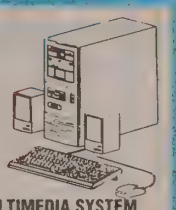

PRESARIO 850 W/CD ROM 340MB MINI MULTIMEDIA SYSTEM

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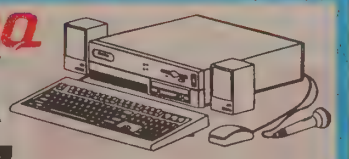

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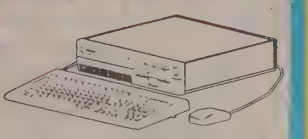

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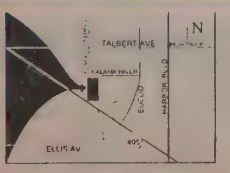

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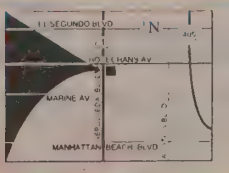

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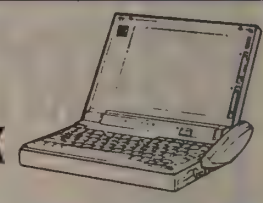

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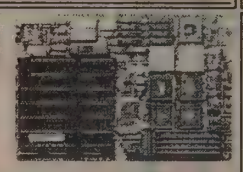

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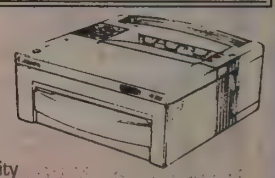

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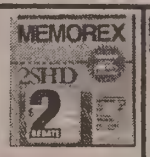

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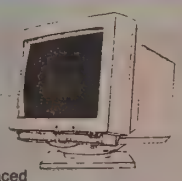

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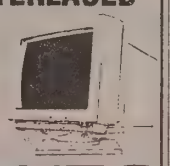

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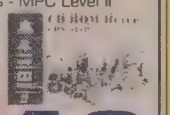

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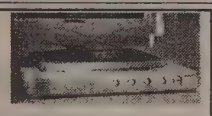

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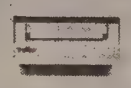

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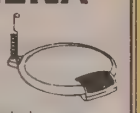

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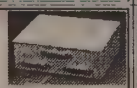

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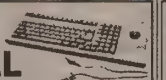

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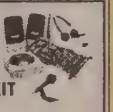

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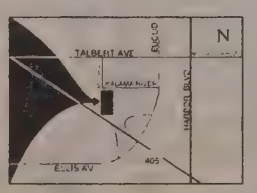

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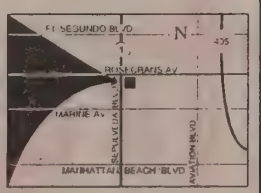

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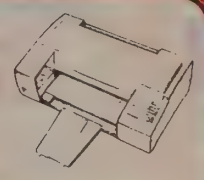

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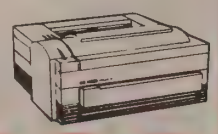

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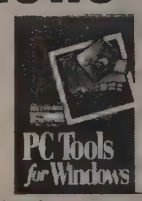

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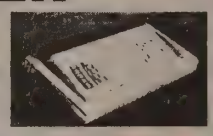

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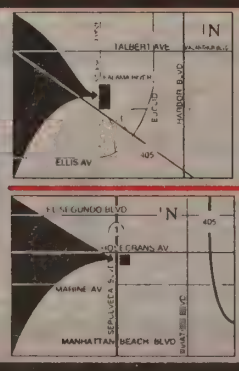

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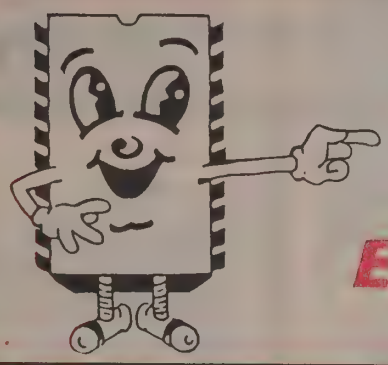

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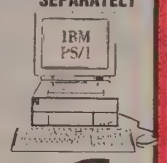

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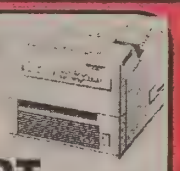

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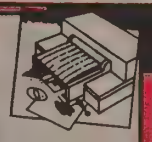

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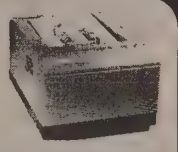

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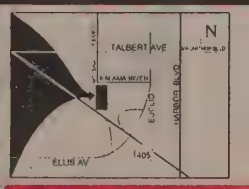

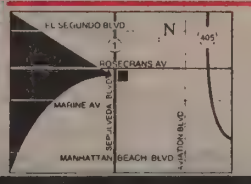

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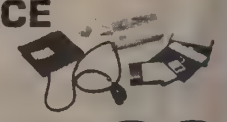

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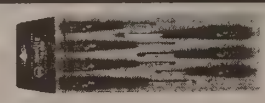

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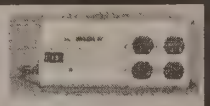

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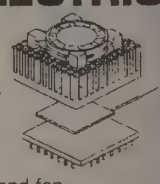

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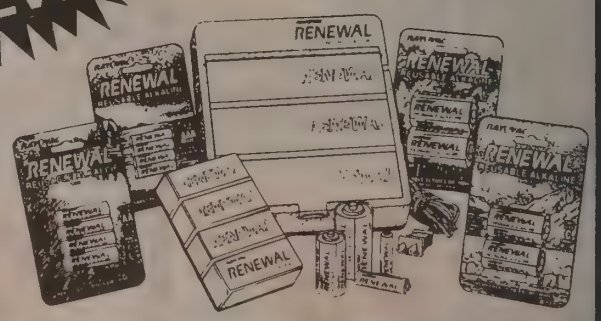

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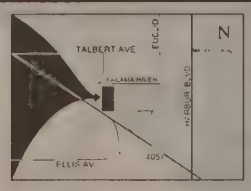

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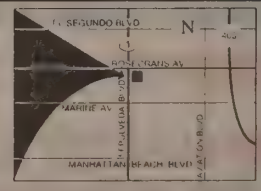

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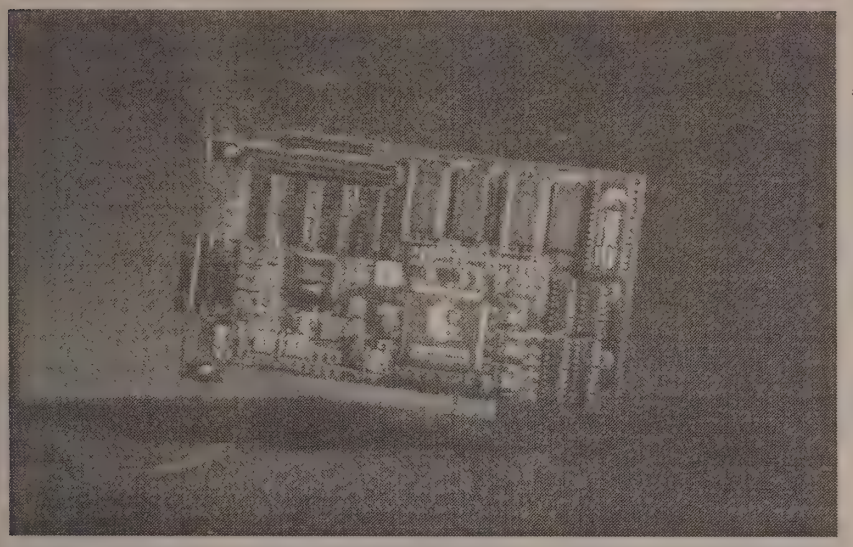
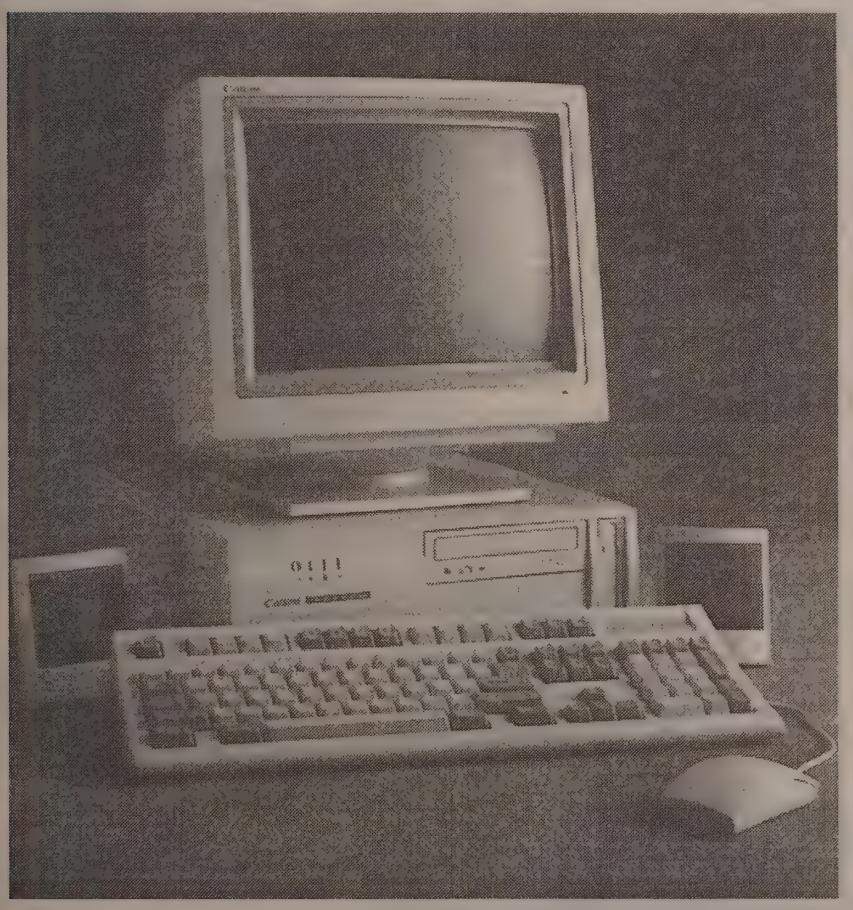
Product Spotlight

Continued from page 94



The Number Nine GXE64 graphics accelerator

Canon Innova Vision L33/210



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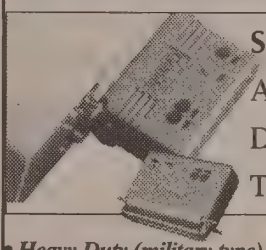

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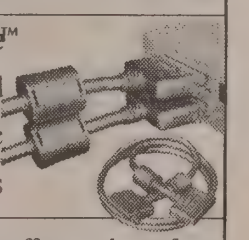

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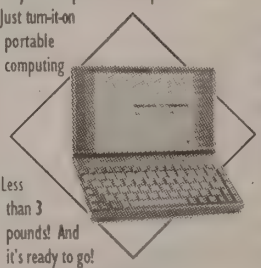

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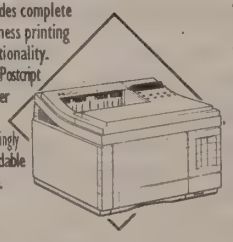

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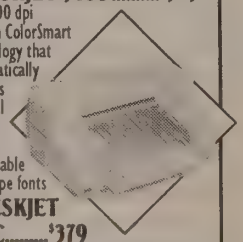

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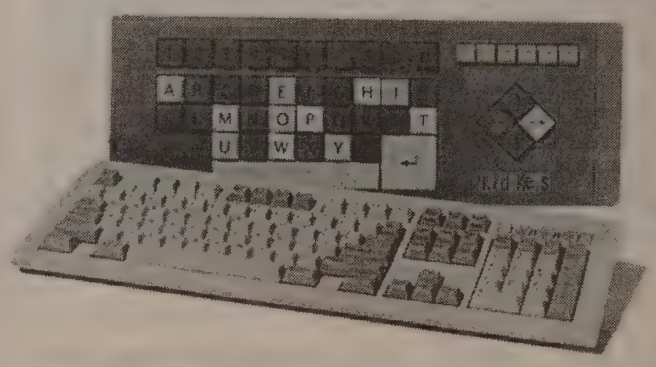

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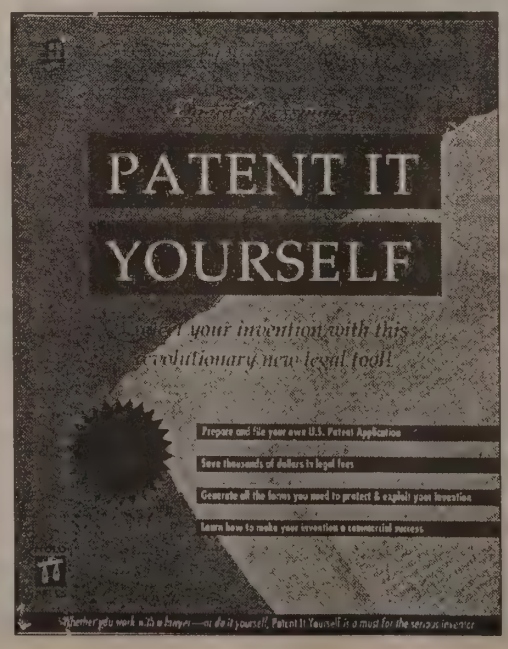
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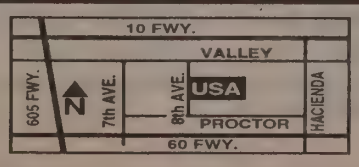

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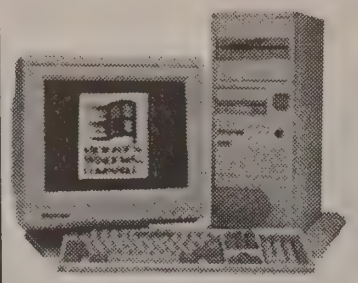

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Product Spotlight

application breaks an otherwise complex and intimidating system down into manageable steps and provides helpful examples from real patents. ($229.95) Nolo Press, Inc., 950 Parker St., Berkeley, CA 94710. 1-800-992-6656.

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Reviews

Game Reviews

Carriers At War

List Price: $69.95
Designed By: Roger Keating & Ian Trout
Published By: Strategic Studies Group
For: IBM 386, 2MB RAM, VGA, mouse required, Adlib/Sound Blaster/PAS/MT-32/Sound Canvas
Reviewed By: Fred Haslam

Carriers at War is a computerized paper game. Some paper games have thousands of pieces and take hundreds of hours to play. By computerizing just such a game, Keating & Trout have built a well-controlled, fast-paced strategy game.

While the game was originally concieved as a traditional paper game, the designers have taken advantage of the computer to simplify several important tasks. The game has extremely nice weather simulation. Enemy units stay hidden until your exploring forces locate them. Pilots are rated Ace, Veteran, Trained, or Green and improve over the course of the game. Any of these tasks would bring a paper game to its knees.

The game has average 16-color graphics, average sound effects, and no music to speak of. The interface is complex and difficult to learn. The AI (artificial intelligence) is also average—it only understands the idea of dominance through superior firepower. This can be challenging, but once you understand the interface, the game becomes a matter of hitting harder, faster, first.

Carriers at War is a decent strategy game (although it is best described as "Operational"). It is extremely good at capturing the "feel" of the era—apprehension, fear, surprise. After learning the system, it becomes automatic. You attack when you are stronger, condense when you are weaker. This game is a good lesson for those who want to learn about WWII, and it is a good wargame for veteran strategy gamers, but for other players it will be overly com-

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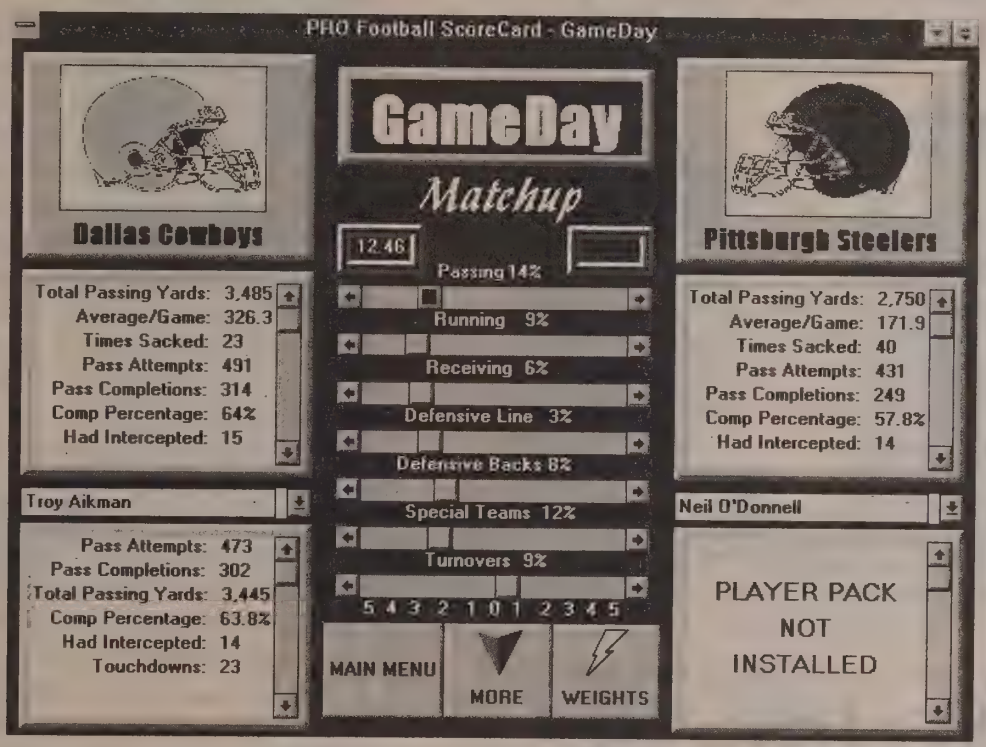

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Product Spotlight

plex and poorly displayed. (Strategic Studies Group, Inc., PO Box 30085, Pensacola, FL 32503-1085. 904/469-8880)

Lands Of Lore

List Price: $62.99, $72.99 for CD-ROM
Published By: Westwood Studios
For: IBM 386, DOS 5.0, 2MB RAM, VGA/MCGA, Microsoft mouse, all major soundcards
Reviewed By: Fred Haslam

In some ways it is unfortunate that as technology advances, what was once astounding becomes commonplace. Five years ago, Lands of Lore would have blown away everything on the market. Now it is just another point-of-view, role playing/adventure game.

The game is attractive, nicely paced, and has great sound effects. Unfortunately, the game pretends to be a role-playing game (RPG) when in fact it is an adventure game. What's the difference? The primary attribute of an adventure game is puzzle solving. You pick up the red key for the red door and so on. It is possible to get into a situation where you don't have the right key and cannot get it—oops, back to a saved game. Role-playing games emphasize the continued improvement of one or more central characters. The frustration of Lands of Lore lies in having to go back to a saved game after spending an hour or more developing your hero; or worse, not having a saved game with the item you need.

The graphics and sound for Lands of Lore are good quality. The CD-ROM version has the distinctive voice of Patrick Stewart as King Arthur. The interface is easy to learn, although it has a few quirks. Remember that reading scrolls is how you learn spells.

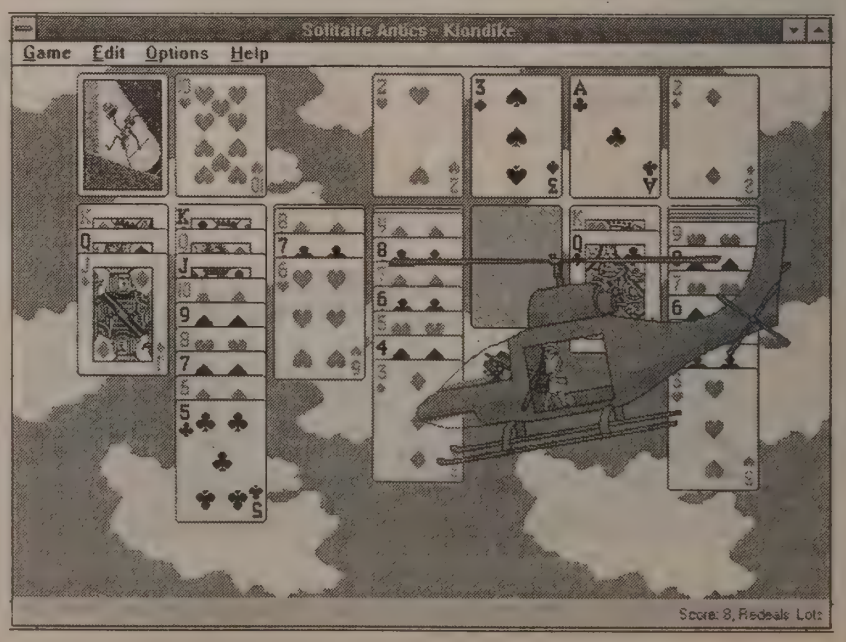
Lands of Lore is not an RPG. It is an adventure game with fighting. As long as you keep this in mind, you should have no problems enjoying the well-developed and imaginative storyline. (Westwood Studios, 3540 W. Sahara Ave., #323, Las Vegas, NV 89195-2246)

Solitaire Antics

Published By: Masque Publishing
For: IBM w/Windows 3.0, VGA, mouse required
Reviewed By: Fred Haslam

Solitaire Antics is solitaire...with antics.

If I sound unenthused, please don't misunderstand. In the realm of Solitaire games, this one is a peach. Like most such games, you have the bonus of never having to shuffle, never get-



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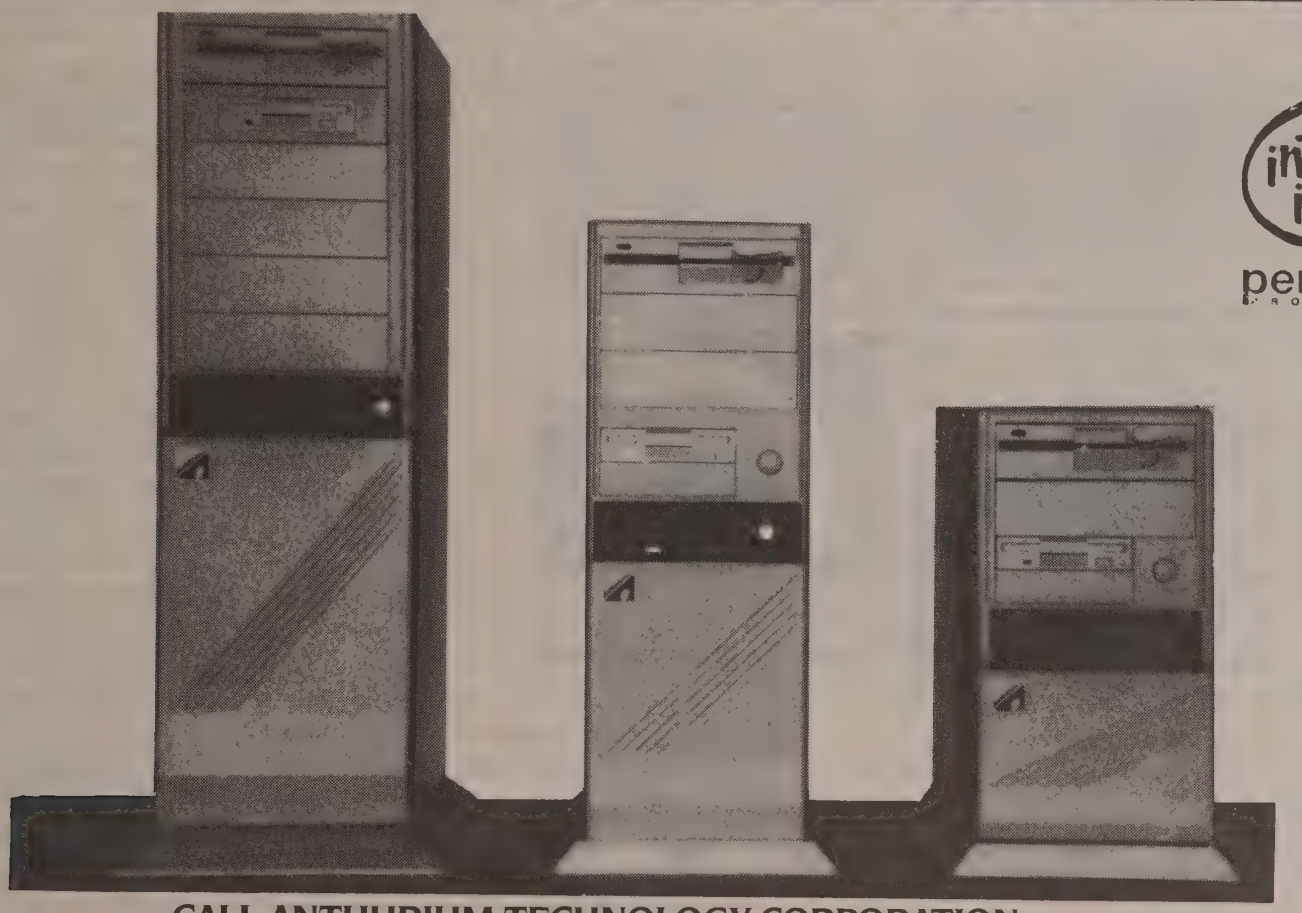

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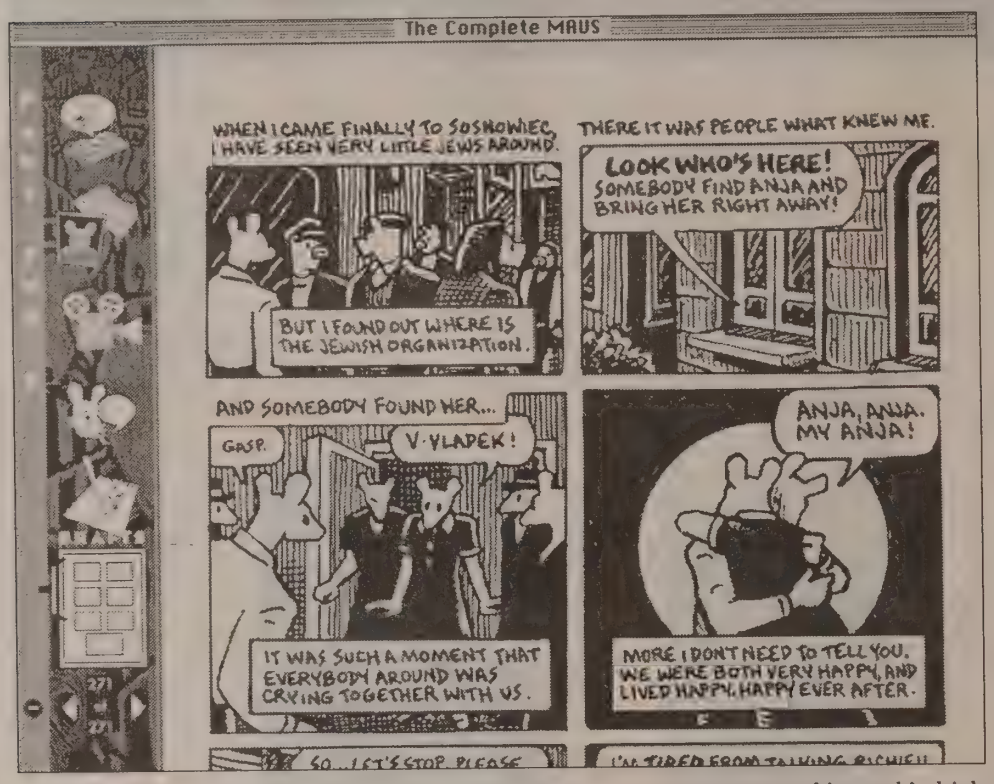
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LOOK WHO'S HERE! SOMEBODY FIND ANJA AND BRING HER RIGHT AWAY!
AND SOMEBODY FOUND HER...
GASP.
V-VLADEK!
IT WAS SUCH A MOMENT THAT EVERYBODY AROUND WAS CRYING TOGETHER WITH US.
ANJA, ANJA. MY ANJA!
MORE I DON'T NEED TO TELL YOU. WE WERE BOTH VERY HAPPY, AND LIVED HAPPY, HAPPY EVER AFTER.

ting to cheat, and not needing a deck of cards. It has over twenty different solitaire games, and will teach you each and every one. Further, you can select various deck patterns and desktop backdrops. Oh yeah, and every now and then (every ten minutes or so) animated ants dance accross the screen—or drive a chariot—or hang glide—or, well you get the idea.

The graphics are high-quality 256-color. The artwork is good. There are no sounds or music. The interface is easy to learn, totally compatible with Windows.

When you come down to it, this is just a solitaire game. It can fill five minutes when you have nothing else to do. People who enjoy solitaire will find this an upgrade from the regular Windows fare. For anyone else, save your money. (Masque Publishing, Inc., PO Box 5223, Englewood, CO 80155. 303/290-9853)

CD-ROM Review

The Complete Maus

Written By: Art Spiegelman
Published By: Voyager
For: Macintosh with 25MHz 68030 processor or better, System 7, 13" color monitor, CD-ROM drive (double-speed recommended)
List Price: $49.95
Reviewed By: Michael Robin

Maus: A Survivor's Tale, Volumes 1 & 2, by Art Spiegelman, tells in comic book format the story of Art's father's, Vladek Spiegelman, experiences during the Holocaust. When it was completed in 1991, after more than thirteen years in the making, *Maus* shattered the conventional concept of the comic book, later receiving a special Pulitzer Prize. It has since been translated into more than half a dozen languages and is used in high schools and colleges in History, English, and Art courses.

To help set the stage for telling this story in comic format, where the Jews are drawn as mice and the German non-Jews as cats, both volumes open with a quote. The first is by Hitler: "The Jews are undoubtedly a race, but they are not human." For the second book, Spiegelman reprints an excerpt from a German newspaper article in the mid-1930s critical of Mickey Mouse, ending with the quote: "Down with Mickey Mouse! Wear the Swastika Cross!"

The Complete Maus CD-ROM highlights the capabilities and frustrations of this medium. The breadth and depth of information presented here enhances the original book format. It incorporates on a single disk the entire contents of the books, plus two hours of the original audio interviews between Art and Vladek Spiegelman, a transcript of their recorded interviews, historical documents, family photos and video clips, and magazine articles and commentary by and about Spiegelman.

The main frustration in this CD-ROM is that unless you have a 19" monitor you cannot see a legible full-size page from the book. The standard 14" monitor displays only about half a page at a time, forcing you to scroll down the page. While this does not cause a problem when you are reading plain text documents, as Spiegelman points out, each book page was designed to work as a standalone image. (Even with a large monitor reading a book on a computer can feel awkward at times.)

In The Complete Maus, Voyager has succeeded in making the transition from traditional book format to digital media and presenting high-quality, rich content on CD-ROM. If you've read Maus in its original ink-on-paper , having it available on your computer will be a great addition to your learning library. The breadth of supplementary information provided here will keep you returning again and again, learning more each time. (Voyager, 578 Broadway, Suite 406, New York, NY 10012. 212/431-5199. Email: VOYAGER@Applelink.apple.com)

Book Review

Netiquette

Author: Virginia Shea
Published By: Albion Books
Price: $19.95
Reviewed By: Kevin Savetz

This slim book does an excellent job of helping those new to Cyberspace learn the basic tenets of netiquette—or "network etiquette." I can't imagine how much trouble and how many mumbled apologies would be averted if everyone read this book before posting that first message. *Netiquette* is easy to read

continued on page 174

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Mid-Tower Case
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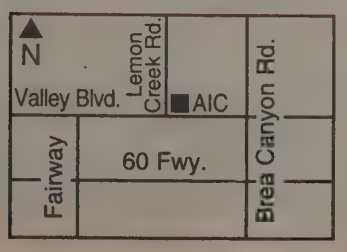

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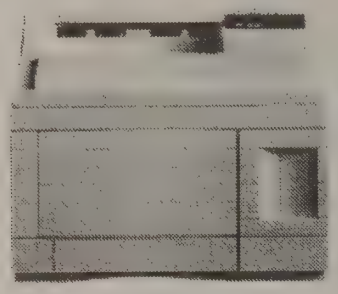

Featuring incredible **600 dots-per-inch output with a *new 12 page-per-minute print engine***, the new HP LaserJet 4M+/4+ is the fastest 600 dpi printer on the market! This quickness can be attributed to the LaserJet 4's fast RISC processor and I/O, making printing complex graphics a breeze! Add to this 45 internal scalable typefaces and 2MB of standard memory (expandable to 32MB), and it's easy to see that the LaserJet 4M+/4+ is *Ahead* of it's time!

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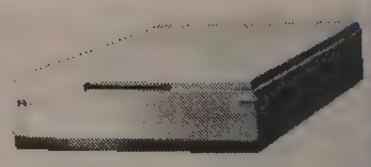

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FREE OCR SOFTWARE

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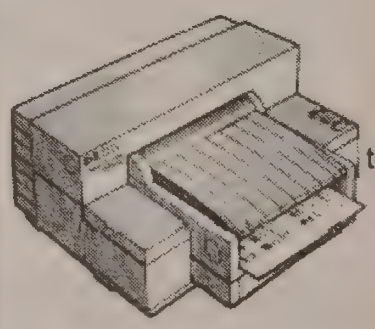

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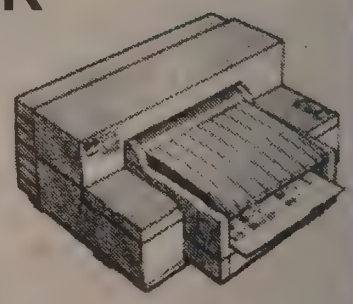

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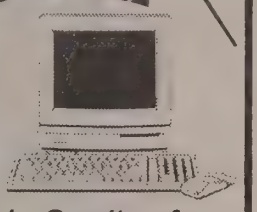

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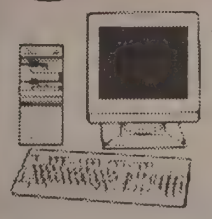
intel inside



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- 101 Enhanced Keyboard
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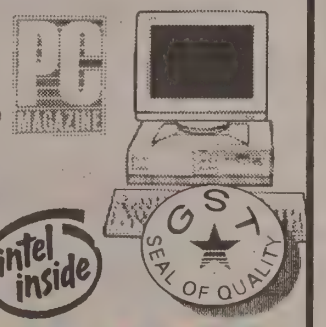
- MS Windows 3.11
- Mouse



intel inside

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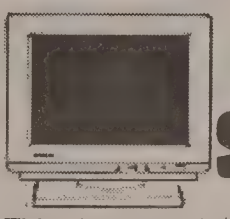

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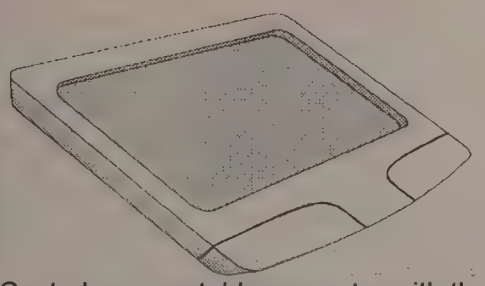

Control your portable computer with the oldest pointing device of all: your finger. Use GlidePoint to move, point, click, and highlight with the lightest touch; wherever you finger goes on the surface, the cursor goes on the screen. Microsoft mouse compatible — connects via PS/2 port.

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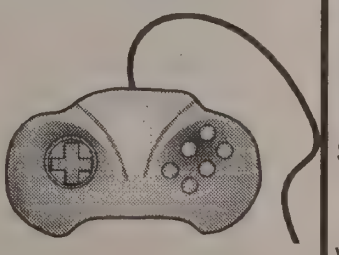

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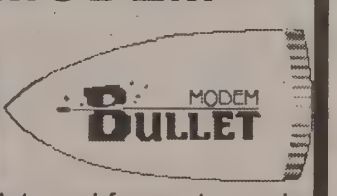

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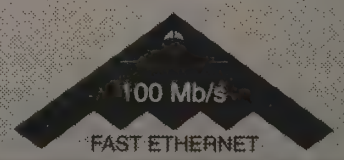

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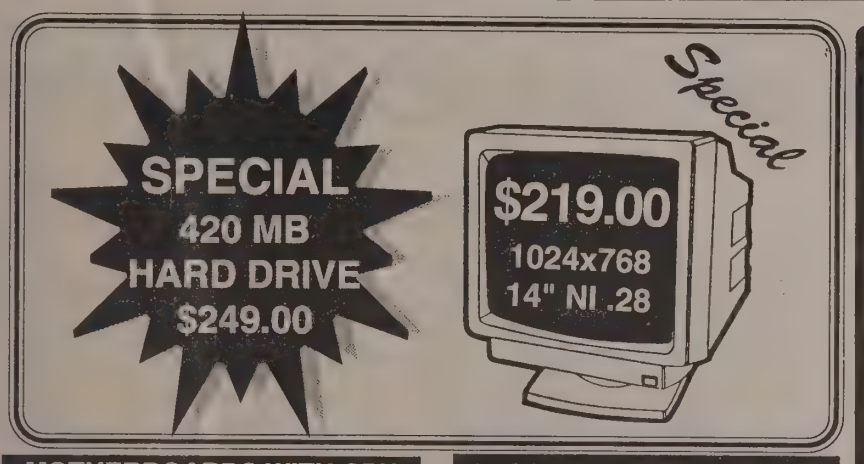

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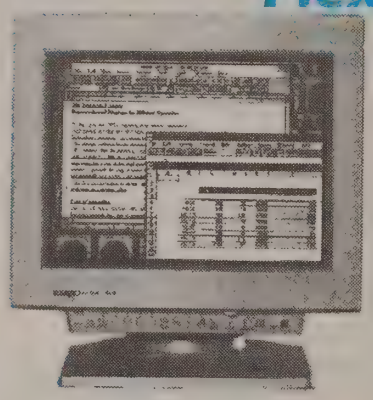

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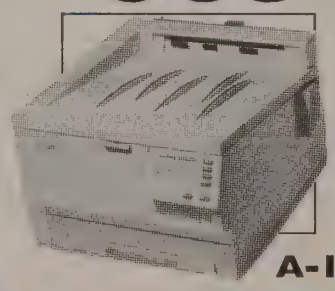

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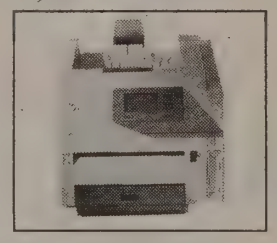

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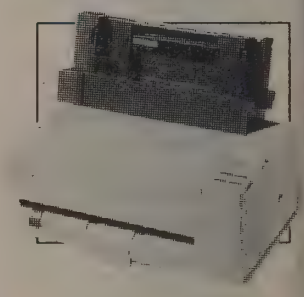

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Gopher interfaces; many Gopher clients let you use telnet and let you transfer files with much the same functionality as ftp.

Switching user interfaces can be confusing to many Internet beginners—all the interfaces don't have the same "look and feel."

Mosaic

Fortunately, the Mosaic document viewer supports all these services. Mosaic was developed by the National Center for Supercomputing Applications as a document browser for WWW. Recently, a company has been formed to provide commercial support for Mosaic.

Mosaic has been called in some circles the "killer app" for the Internet. It gets this reputation mostly by being the jack-of-all-trades document viewer. Mosaic has a friendly graphical user interface. A beginning user can very easily run Mosaic and browse through documents at many Internet archive sites.

It supports access to WWW servers and Gopher servers. It also lets you do WAIS and Veronica searches. In addition, you can gain access to information sources only available via telnet. For example, the Vienna Stock Exchange is available using telnet from within the Mosaic browser, allowing you to look at stock prices on the exchange. For the casual Internet browser, there is little need to stray outside the Mosaic environment once inside it.

Mosaic was originally developed as an X-Windows application and ran principally on UNIX workstations. The program has since been converted to both the Macintosh and IBM compatible PCs running Windows. This opens up the product to a much wider audience. It is now possible to run Mosaic on a Mac or PC at home with connections to an Internet provider over a dialup phone link. While the limited bandwidth of even high-speed modems means the application does not retrieve information as fast, Mosaic is still usable. ISDN service, which promises speeds up to 128 kilobits per second (well above the effective 14.4kbps available with a high-speed modem) is a perfect fit for Mosaic, and for the individual or small-business Internet user who cannot afford dedicated access.

Performance Systems International, an Internet provider, recently announced support for ISDN in some areas and also announced support for a service with Mosaic as the focus of its service offering. Expect other Internet providers to follow with similar packaged services using Mosaic.

Mosaic is an exciting development and is spurring the growth of WWW servers, as well as other information resources. It is also introducing the Internet in a more friendly way to many nontechnical people. ■

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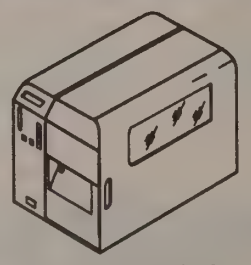

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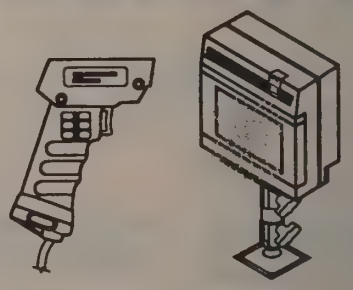

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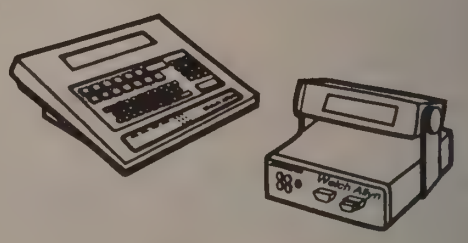

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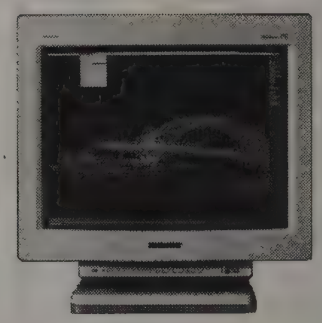

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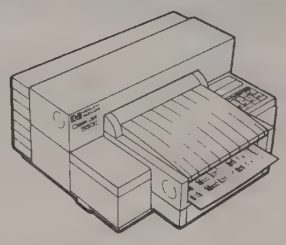

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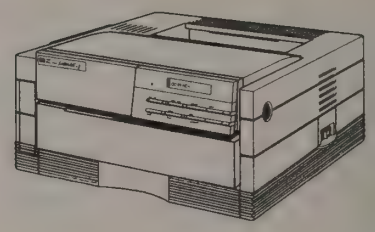

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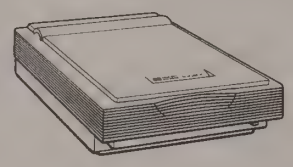

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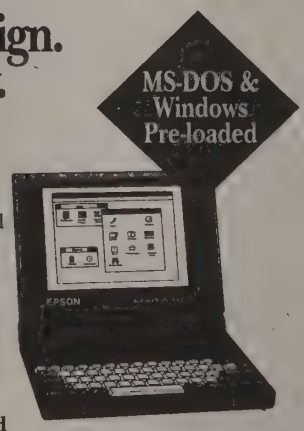

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Continued from page 90

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WHAT DO YOU SEE AS ESPECIALLY STRONG PRODUCT AREAS? WHAT ARE PEOPLE MOST INTERESTED IN?

When we conceived Informat, we said we want to do trade shows different from the way they were done before. We know that the multimedia specialist is very different from the mobile computing specialist. The software engineer who does a client-server application is completely different from the desktop computing specialist. So we said, let's create villages.

The subtitle of Informat is "the global villages." Our job is to be global, and the villages harbor one technology, one set of solutions. It's a metaphor to say we're trying to make the world a global village. At our trade show we have manufacturers coming from all over the world, representing so many different nationalities; but in a village, which is a place you can walk through in two or three hours and know the people who are part of it, you have a center, and you have all the players there.

We have a multimedia village, we have a Windows village, we have a UNIX village, we have a client-server village, we have the mobile computing village... We have twelve villages. In the middle, we have the capital.

The answer to your question is in the villages we have selected. We have selected villages that correspond to people's needs. All those villages correspond to a thirst for knowledge and products around the globe, and Europe in particular.

SO THE TRADE SHOW IS MORE FOR EXISTING PRODUCTS THAN FOR EARLY STAGE DEVELOPERS?

We realized that we wanted to have established product, but we wanted also to display some novelty, and not just have the products five months after they've been introduced in America. So we're trying to encourage the emerging firms.

You remember the Greeks? In ancient Greece there was the agora, where people could go and talk and express the ideas and show the products and say what they had to say.

In the middle of each of our villages is an agora, where people can come with their product. We invite them to come and show their new product; we have a special package for emerging companies to show their product. Every thirty minutes there's a new product being shown. In twelve villages, every thirty minutes there's something exciting happening. New products from everywhere.

It will cost entrepreneurs about $3000 to show their products to thirty thousand people throughout Europe. You're talking about 75% of the purchasing power of Europe in one place. You'll have a chance to show all their products under one roof.

People wanted to see something new, not what they could see elsewhere. So we are giving them a forum to do that.■

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DISCOUNT MEMORY OUTLET
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WE WILL MEET OR BEAT ANY ADVERTISED PRICE
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SPEED	60 NS	70 NS	80 NS
1 X 9 (3 CHIP)	42.00	39.00	38.00
1 X 9 (9 CHIP)	49.00	48.00	47.00
4 X 9 (3 CHIP)		149.00	
4 X 9 (9 CHIP)	159.00	155.00	150.00
4 X 8 (8 CHIP)		148.00	145.00

72 PIN

1 MB	65.00
2 MB	105.00
4 MB	165.00
8 MB	349.00
16 MB	640.00
32 MB	1,299.00

D-RAM

SPEED	70	80	10
256KX1	2.75	2.50	-
256KX4	5.95	5.50	
1MEGX1	4.95	4.75	3.95

CACHE RAM

SPEED	15NS	20NS	25NS
32 X 8	8.50	7.95	7.50
64K X 1	10.50	5.95	5.50
128KX8		45.00	34.00
8K X 8	5.95	5.50	4.50

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486 SLC 25	486 DRX2-16/32
486 SLC-33	486 DRX2 20/40
486 DLC-25	486 DRX2-25/50
486 DLC-40	486 SRX2-20/40

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PENTIUM 66
PENTIUM 60
486 DX 2-66
486 DX 33
486 DX 50
486 DX 2-50

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APPLE LASER WRITER II,IINTX,IINTX-J,IIf,IIg, 310,600,630
BROTHER HL-8D/8E/8V/10DV/10PS/10DPS/4/4PS/4V/4VE
CANON LBP 430/4SX/8II/8IIB/8IIT/8SX
EPSON ACTION LASER II/EPL 4000/EPL/4100/8000/6000/7000
HP DESKJET500/PLOTER/II/IID/IIP/IIP+/III/IIID/IIIP/IIISI/4/SI/M/MX/P/M
IBM LEXMARK 10/R/A/L/P/12R/L/16L/5E/6/A/P/4019/E
KONICA LP 3110/3115/KYOCERA F800/F800A/F800T
OKIDATA OL 800/820/830,PLUS/840/850/810/400/400E/410E
PANASONIC KX P 4450/4420/4455/4451/4410/4430/4400/5400
SHARP JX-9400/9460/9600/PS/9660/9700/E/9500/PS/E/H

MATH-CO

CYRIX

83D87 (DX)	59.95
83S87 (SX)	57.95

ITT/ULSI

387DX	44.95
387SX	43.95

APPLE

MODEL	1MB	2MB	4MB	8MB	16MB
MAC CLASSIC/COLOR CLASSIC/LC/LCII,	65	105	175	350	
PERFORMA/200/400/405/410/430					
PLUS,SE,IIC,IIS,,LCII,IICX,IIVX,IIVi,PERFORMA	-	95	152	335	595
MACIIX,IIX	69	-	185	-	635
MACIIFX	-	-	245	-	725
PERFORMA 450/460/466/467/475/476/550	-	-	159	350	650
CENTRIS 610/650/660AV/LCIII/QUADRA 600's	49	95	155	338	625
QUADRA 800/840AV	-	95	156	345	650
QUADRA 700/900/950	-	-	155	-	650
QUADRA 660AV/610/650				350	650
POWERBOOK 140/145/170/160/165/180		105	175	365	-
POWERBOOK 165C/180C	-		195	379	

AST

MODEL	1MB	2MB	4MB	8MB	16MB
BRAVO 286/8/16,386SX16/20/25		108		350	
BRAVO 3/25s/33s	-	110	165	345	645
BRAVO LC 486 BASED,4/25s/33/33s/50d/66d		110	170	350	-
ADVANTAGE 386/20/25, PRO 386SX25	-	108		350	
ADVANTAGE PLUS/486 SERIES	-	110	175	355	
ADVANTAGE PRO 486DX/33,SX25	-	118	185	385	670
PREMIUM 386/386c	75		175		-
PREMIUM 386/33T,SX 16,PREMIUM II 386SX	68		168		
POWEREXEC 286/12,386SX/20/25/25c	75		198		
POWEREXEC 3/25SI,/SLC/EL		115	245	495	995
POWEREXEC 4/33 SL,COLOR,COLOR PLUS			195		850

NEC

MODEL	1MB	2MB	4MB	8MB	16MB
POWERMATE 386SX20/16/16i/20i/25i/325	-	125	-	365	
POWERMATE 386/25s	-	-	195	350	-
POWERMATE 386/33i,486 SERIES,EXPRES	-	-	-	-	
READY 425/433/EXPRESS/II 433ST/466ST	75	-	195	-	648
IMAGE 486/P60 SERIES	-	-	195	364	665
PROSPEED 486SX/SXC/16/286	79	115	195	365	-

HEWLETT PACKARD

MODEL	1MB	2MB	4MB	8MB	16MB
VECTRA 386/33N/33NI	-	105	-	345	-
VECTRA 486MLM,MX,486/25/33/50/66/N,NI,486U	69	120	188	350	665
PC 486 VL					

COMPAQ

MODEL	1MB	2MB	4MB	8MB	16MB
DESKPRO 286e/386/20/20e/25/25e/386s	85		205		
DESKPRO 286/386N/s/20,SLRIES, SYSTEM PRO	69	115	179	365	650
,LT/486/33,PROSIGNIA PC SERVER 486/33/DX2					
,66/386/25M /33M, 486s/16/25/33/2-50/2-66 M					
,SERIES,SYSTEM PRO/386,486 LT SERIES,XE					
,433s/450/466					
DESKPRO 386/33,SYSTEMPRO 386/33,486/33L		120	185	375	
,/25/50L/33,1020e,2040e,486/331e/680e					
PROLINEA 4/25s/33/50/66/MT	66	125	185	198	665
,SERIES,CDSNET1/25s,PRESARIO 400/600/800					
,SERIES					
PROLINEA 3/25s/25zs		120	185	375	
I,TE386/20,LITE/20/25/25C/25E,4/25/25C/33C	95	130	229	395	725
CONTURA 3/20/25/25C,4/25/CX/EX		115	185	350	895

IBM

MODEL	1MB	2MB	4MB	8MB	16MB
MOST PS/1 ADVISOR,CONSUL,FANT,ESSENTIAL,					
EXPLRT,PRO OF 2133/2155/2168 SERIES	65	105	175	355	660
/P2 MODEL: SX25/35/40/40/50Z/60/65/70/71/80/80-					
041					
486 90XP/VALUEPOINT					
325T/425SX/Si/433DK/466DX					
2/Si/425SX/433SX/433DX/450DX2/P60/D,RS6000,					
POWER STATION/POWER SERVER 220.	68	120	179	360	665
PS/2 LAPTOP,L40SX,NOTE182,N33SX,N33SX		135	205	366	

TOSHIBA

MODEL	1MB	2MB	4MB	8MB	16MB
T8500/T1000SE/1000XE/T000LE	79	125	-	450	
T1800/1850/1850C/2000/2000SX/2000SXE/2200SX	-	125	225	405	695
3300SL/4400/6400/6600/1900/1950/4500/4600/					
T1200XE/1600/3100SE/3200		129	188		
T3100e/3200SX/3200SXC		115	210		
T1900/1950/1950c/4500/4600/4700			245	450	895
T1500/5200/5200C		128		445	

TEXAS INSTRUMENTS

MODEL	1MB	2MB	4MB	8MB	16MB
TRAVELMATE 2000/3000/3000WINX	95	115			
TRAVELMATE 4000			225		1250

CALL FOR PRICES ON ALR,DEC,DELL,MAGNAVOX,PACKARD BELL,GATEWAY2000
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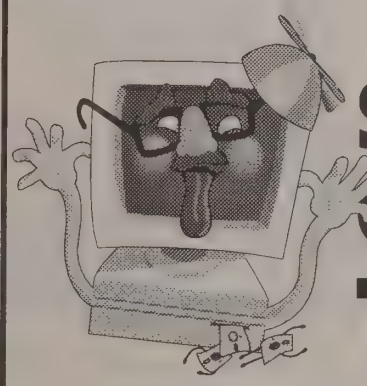

Stupid Computer Tricks

Can you make your computer beg, roll over or play dead? How about sing, sew, think, garden, or do makeovers?

If you have a unique or fun use for computers, we want you to show it off in the Demonstration Hall of the San Diego Computer Fair '94!

We're looking for companies, groups or individuals with the most off-the-wall computer applications to fill the final few spots in the Demonstration Hall. If we deem you fun or odd enough, you could be offered a free exhibit booth—where you can show off your weird wares to over 25,000 computer consumers, and local, national and international press, at Southern California's largest consumer computer show.

Boring stuff need not apply!

To be considered for a coveted spot in the Demonstration Hall, please fax a description of what weird or wonderful thing you can make a computer do to:
ComputorEdge Magazine
Attn: Gretchen Lingham, (619) 573-0205
Give company, group or product information as appropriate.

The San Diego Computer Fair '94 will be held on September 22-25 at the downtown San Diego Community Concourse. Expected attendance is 25,000 to 30,000. For more information, contact Gretchen Lingham at (619) 573-0617.

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- Pentium (p24T) Overdrive Ready
- 256K Cache
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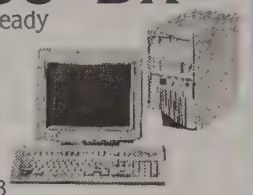
- 1.44MB Floppy Drives
- 14" SVGA 1024 x 768 NI (.28) Full Screen
- VESA LB SVGA Video w/1MB
- VESA IDE FD/HD Controller w/IO
- 1 Year Parts and Labor Warranty



486DX-33.....$1090
486DX2-66....$1250

CBM VESA 66 MULTIMEDIA

HOT! BEST BUY!

- VESA 66MHz Motherboard
- Math Co-processor Built-in
- **Panasonic Double Speed CD ROM**
- **Sound Blaster 16 Bit Sound Card**
- **Multimedia Speakers**
- 7 CD ROM Titles
- 4MB RAM
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- VESA LB IDE FD/HD Controller w/IO
- VESA LB SVGA Card w/1MB, up to 2MB
- 14" Monitor 1024 x 768 .28 NI Full Screen
- 101 Enhanced Keyboard
- 3 Button Mouse
- 1 Year Parts and Labor Warranty
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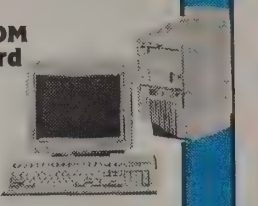
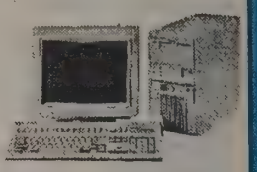


SPECIAL PRICE....$1425

CBM 486-66MHz PCI LOCAL BUS

- **Genoa Motherboard**
- 4 PCI, 5 ISA Slots
- 4MB RAM up to 128MB
- 256K Cache up to 512K
- **420 MB** Hard Drive
- **PCI IDE Controller Card**
- 2 Serial, 1 Parallel Port
- **Genoa PCI SVGA Card w/2MB**
- **15" SVGA** 1280 x 1024 .28 NI
- 101 Keyboard
- 3 Button Mouse



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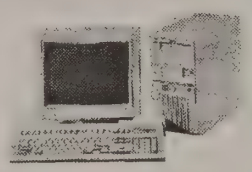
CALL FOR PCI SCSI OPTIONS TO 2.1GB! CUSTOM CONFIGURATIONS AVAILABLE!

CBM PENTIUM PCI

- Intel Pentium CPU
- 4 PCI Bus Master & 5 ISA Slots
- **8MB** RAM up to 128MB
- 256K Cache up to 512K
- **420MB** IDE Hard Drive
- **PCI IDE Controller**
- 1.44 Floppy
- 2 Serial, 1 Parallel Port
- **PCI Video Accelerator Card w/2MB**
- **15" 1280 x 1024 SVGA .28 NI Flat Screen**
- 101 Enhanced Keyboard
- 3 Button Mouse



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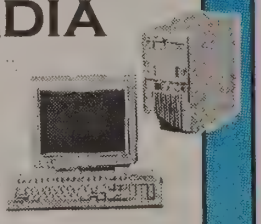
PENTIUM-66MHz....$2295

CBM PENTIUM PCI MULTIMEDIA

TRIPLE SPEED!

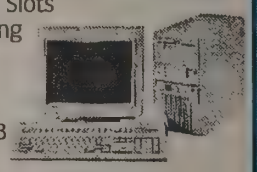
- Intel Pentium CPU
- 4 PCI Bus Master & 5 ISA Slots
- **8MB** RAM
- 256K Cache
- **540MB** IDE Hard Drive
- **PCI IDE HD/FD Controller**
- 2 Serial, 1 Parallel Port
- **Orchid Kelvin PCI** Video Card w/2MB
- 1.44MB Floppy Drive
- 15" 1280 x 1024 .28 NI SVGA Monitor
- **NEC 3Xi Triple Speed CD ROM,** Internal
- **Media Vision Spectrum 16** Sound Card
- **Multimedia Speakers**
- **7 CD ROM Titles**
- 101 Enhanced Keyboard
- 3 Button Mouse
- 1 Year Parts and Labor Warranty



PENTIUM-60MHz....$2895
PENTIUM-66MHz....$2995

CBM P5-90 PENTIUM PCI

- PCI/VL/ISA Motherboard
- 4 PCI, 5 ISA, 2 Buffered VESA Slots
- Flash BIOS, Auto Power Saving
- **16MB RAM**
- **540MB** IDE Hard Drive
- **1.44** Floppy Drive
- PCI Orchid Kelvin 64 Bit 2 MB
- PCI IDE Controller
- Floppy Controller w/2 Serial, 1 Parallel
- **17" KFC Digital 1280 x 1024 NI Monitor**
- 101 Keyboard
- Mouse



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HP 4+	$1375
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HP DeskJet 500C	$375
HP DeskJet 310	$295
HP DeskJet 520	$290
HP 1200C	$1395

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Epson LQ 1170	$615

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(Digital Add $75)

KFC 17" 1280 x 1024 NI .28 Digital $685

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- 4MB RAM up to 8MB
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- 180MB HD
- 1.44MB Floppy
- Carrying Bag
- **1 Year On-Site Service**
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Canon INNOVA 486NX

- 486SX-25MHZ
- 4MB RAM up to 12MB
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- 9600 Fax/2400 Modem
- Built-in Trackball
- DOS 6.0/Windows 3.1
- Monochrome
- Works for Windows

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EPSON® ACTION 4000 SUBNOTEBOOK

3.85 LBS!

- 486SLC-33MHz
- **Only 3.85 Lbs.**
- **PCMCIA Slot**
- 4MB up to 8MB
- 120MB Hard Disk
- 1.44MB Floppy Drive
- **Built-in Trackball**
- **MS DOS, Windows 3.1 & WinFax**
- **1 Year On-Site Service**

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HEWLETT PACKARD HP OMNIBOOK 430

- 4MB RAM
- 40/105MB HD
- PCMCIA Type II Slot
- Monochrome

40 HD/$1099
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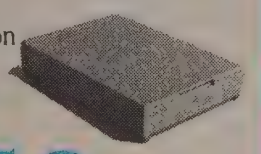
- OFOTO® 2.0 Professional Scanning Software
- One Button Easy-to-Use
- Small Size 8.5" x 11.7"



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NEW!

- **486SLC2-50MHz**
- **Passive Color Screen**
- 4MB RAM up to 8MB
- **120MB HD/180MB HD**
- Fax/Modem
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- **1 Year On-Site Service**

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MITAC COLOR NOTEBOOK

- Passive Color Screen
- 486SX-33MHz Intel
- 4MB up to 8MB
- **200MB Hard Disk**
- 1.44MB Floppy Drive
- Built-in Trackball
- System Pre-loaded MS DOS & Windows 3.1

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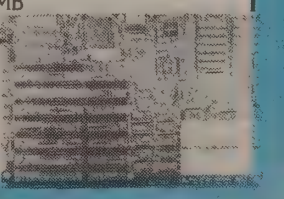
Sound Blaster 16	$98
Sound Blaster 16 SCSI II ASP	$215
Pro Audio Spectrum 16	$115
NEC 3Xi CD (Triple)	$375
Toshiba 4101 (Double Spin)	$225
Mitsumi Double Speed CD	$155

PCI/ISA PENTIUM MOTHERBOARD

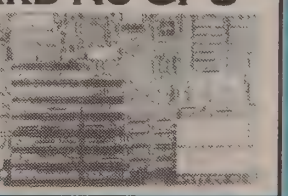
- No CPU
- 72 Pin SIMM Slots up to 128MB
- 4 PCI, 5 ISA Slots
- Intel Chipset
- 256K Cache up to 512K
- Award Flash BIOS



$360

486DX VLB MOTHERBOARD NO CPU

- 256K Cache
- AMI BIOS



$99

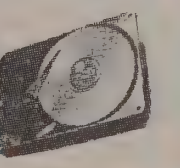
PCI/EISA PENTIUM MOTHERBOARD

- No CPU
- PCI/EISA Pentium
- 4PCI Slots
- 256K CACHE
- Intel Chipset

$495

HARD DRIVE

420 MB IDE $280
250MB IDE $215



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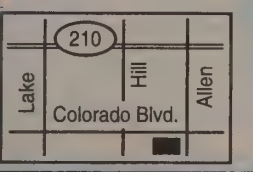

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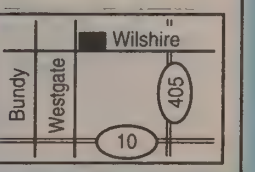

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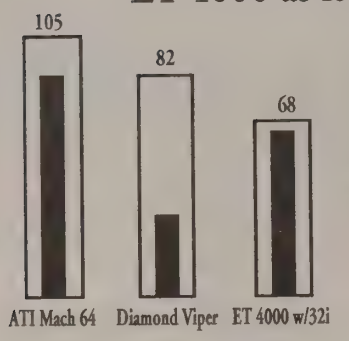
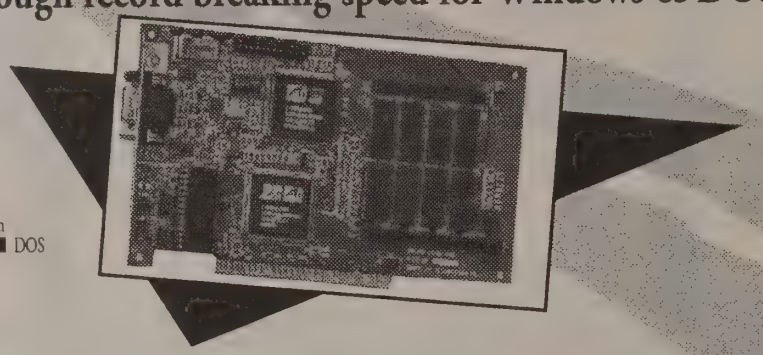


Windows & DOS
Speed Records
Source: ZD Labs WnBench
3.11 & PC Bench 7.01 ■ DOS



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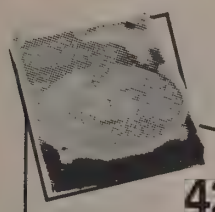

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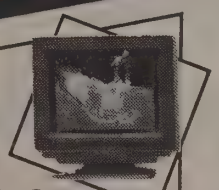

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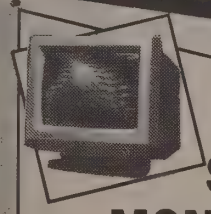

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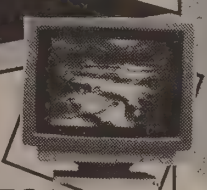

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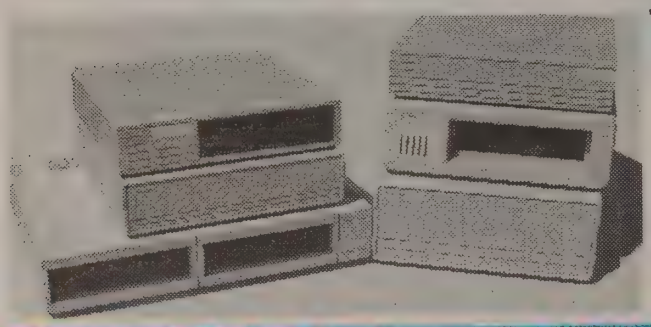

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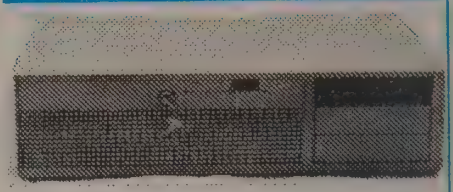

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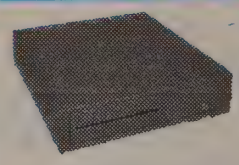

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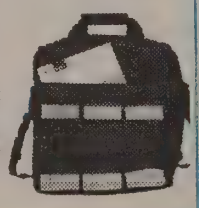

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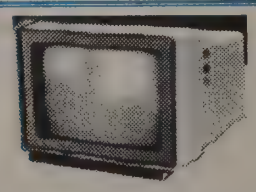

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Resources

Calendar Of Events

CONFERENCES, SHOWS, SPECIAL EVENTS

JUNE

June 11 California Computer Show And Sale. Anaheim Stadium. Robert Austin Corp. Call: (415)347-0100.

June 11 Computer Marketplace. Sherman Square Entertainment Ctr., Reseda. National Productions. Call: 1-800-800-5600.

June 11–13 ShowBiz Expo. Los Angeles Convention Center. Advanstar Expositions. Call: 1-800-854-3112 or (714)513-8400.

June 12 Computer Marketplace. Sequoia Conf. Ctr., Buena Park. National Productions. Call: 1-800-800-5600.

June 12 Computer Show And Sale. Community Center, Oxnard. MarketPro Shows. Call: (415)456-6730.

June 12 Computer Show And Sale. Fresno Fairgrounds, Fresno. MarketPro Shows. Call: (415)456-6730.

June 13–15 NECC '94: The National Educational Computing Conference. Boston. International Society for Technology in Education. Call: Donella Ingham, (503)346-2834.

June 13–16 SunWorld Conference. San Francisco. Smith & Shows. Call: (508)820-8658.

June 16–18 Tutorial Week '94. Ramada Hotel, Culver City. Association for Computing Machinery. Call: Dave Oppenheim, (310)476-4919.

June 17–18 MacFair LA '94, The Macintosh Trade Show For Southern California. Burbank Hilton Convention Center. Los Angeles Macintosh Group. Call: (818)574-8047.

June 19 Outdoor Computer Swap Meet. CSU, Northridge. Advertising Concepts Productions. Call: Frank or Beth Perez, (805)520-1423.

June 20–23 NEXTSTEP EXPO '94 Developer And User Conference. Moscone Center, San Francisco. DCI. Call: 1-800-767-2336.

JUNE 17–18
MACFAIR LA '94
Burbank Hilton and Convention Center, Burbank

MacFair LA '94, presented by the Los Angeles Macintosh Group, is two days of exhibits and seminars dedicated to Macintosh users and purchasers. Last year's event attracted over six thousand attendees and included industry players such as Apple, Microsoft, Adobe, Aldus, Claris, Frame, Hewlett-Packard, and many more. This year's turnout is expected to be over eight thousand attendees. The Los Angeles Macintosh Group is the largest Macintosh user group in the US and has a record of producing successful major events. Call: (818)574-8047.

JULY 9 & 10
COMPUTER SHOWS
Reseda & Buena Park

National Productions presents the Computer Marketplace. Hundreds of exhibitors with thousands of products of interest to beginners and advanced computer users will be featured. Admission and parking are free, and the shows are from 10:00 am to 5:00 pm. The Reseda Marketplace is Saturday at the Sherman Entertainment Center, 18430 Sherman Way; the Buena Park Marketplace is Sunday at the Sequoia Conference Center. Call: 1-800-800-5600.

NOTICE TO REGISTER FOR ONE BBSCON

The Third Annual ONE BBSCON will be held at the INFORUM/Atlanta Market Center in Atlanta, GA, on August 17–21. Registration by August 1 is $250, which includes admission to all ONE BBSCON and SSS sessions and exhibits, Wednesday evening Welcome Reception, coffee breaks, and three lunches. After August 1 the fee is $325. A special rate of $95 per night, single or double occupancy, is available for convention attendees at the Atlanta Marriott Marquis if reservations are made with ONE, Inc. prior to July 27. For more information and a registration form, call ONE, Inc. at (303)693-5253.

JUNE 19
COMPUTER SHOW
Cal State Northridge

Advertising Concepts Productions brings the return of the monthly Cal State Northridge Outdoor Computer Swap Meet. Over one hundred exhibitors are expected, offering software, CD-ROMs, hard disks, floppies, computers, cables, monitors, memory chips, and peripherals. Admission is $2 and children under 12 are always free; parking is free. Call Frank or Beth Perez at (805)520-1423.

June 23–25 PCC '94: The Personal Communications And Computing Show. Chicago, IL. PCC. Fax: (202)457-8898.

June 25–26 Computer Marketplace. Pomona Fairplex. National Productions. Call: 1-800-800-5600.

June 25–26 FLIGHT.Ware Xpo. Santa Monica. Santa Monica Museum of Flying. Call: (310)392-8822.

JULY

July 2 Computer Show And Sale. Ventura Fairgrounds, Ventura. MarketPro Shows. Call: (415)456-6730.

July 3 Computer Show And Sale. Scottish Rite Center, San Diego. MarketPro Shows. Call: (415)456-6730.

July 9 Computer Marketplace. Sherman Square Entertainment Ctr., Reseda. National Productions. Call: 1-800-800-5600.

July 9 Computer Show And Sale. Fresno Fairgrounds, Fresno. MarketPro Shows. Call: (415)456-6730.

July 10 Computer Marketplace. Sequoia Conf. Ctr., Buena Park. National Productions. Call: 1-800-800-5600.

July 10 Outdoor Computer Swap Meet. CSU, Northridge. Advertising Concepts Productions. Call: (805)520-1423.

July 16 California Computer Show And Sale. Anaheim Stadium. Robert Austin Corp. Call: (415)347-0100.

July 16–17 Computer Marketplace. Pomona Fairplex. National Productions. Call: 1-800-800-5600.

July 21–23 1994 International Symposium On Mathematics/Science Education And Technology. San Diego. Association for the Advancement of Computing in Education. Call: (804)973-3987.

July 21–24 Imaging The Future: The Effect Of The Digital Revolution On Design Conference. Kauai, Hawaii. American Film Institute. Call: (213)856-7690.

July 23 Computer Marketplace. Earl Warren Showgrounds, Santa Barbara. National Productions. Call: 1-800-800-5600.

July 23–24 International Computer Show And Sale. Riverside Convention Center

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SHOW DATES

June 11 Saturday	**RESEDA** - Sherman Entertainment Center From 101 Freeway, take Reseda off ramp, turn left (if traveling East) to Sherman Way, turn right, one block to Canby Street. 18430 Sherman Way.	**ADMISSION FREE!**
June 12 Sunday	**BUENA PARK** - Sequoia Conference Center Take the Beach Blvd. Exit off the 91 Freeway, go one block North to 7530 Orangethorpe.	**ADMISSION FREE**
June 25 & 26 Saturday & Sunday	**POMONA** - Fairplex (LA County Fairgrounds) Exit Highway 10 at Fairplex Drive. Go North to McKinley, turn right. Turn Left on White Avenue to Gate 14.	Admission: $7.00
July 9 Saturday	**RESEDA** - Sherman Entertainment Center	**ADMISSION FREE**
July 10 Sunday	**BUENA PARK** - Sequoia Conference Center	**ADMISSION FREE!**
July 16 & 17 Saturday & Sunday	**POMONA** - Fairplex (LA County Fairgrounds)	Admission: $7.00
August 6 & 7 Saturday & Sunday	**POMONA** - Fairplex (LA County Fairgrounds)	Admission: $7.00
August 13 Saturday	**RESEDA** - Sherman Entertainment Center	**ADMISSION FREE!**
August 14 Sunday	**BUENA PARK** - Sequoia Conference Center	**ADMISSION FREE!**
August 27 & 28 Saturday & Sunday	**POMONA** - Fairplex (LA County Fairgrounds)	Admission: $7.00
September 10 Saturday	**RESEDA** - Sherman Entertainment Center	**ADMISSION FREE!**
September 11 Sunday	**BUENA PARK** - Sequoia Conference Center	**ADMISSION FREE!**

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(Raincross Square). R.G. Canning. Call: (213)587-5100, Event Ext. 4; (909)628-4236, Event Ext. 50.

July 24 Computer Show And Sale. Community Center, Oxnard. MarketPro Shows. Call: (415)456-6730.

July 24–29 Siggraph '94. Orlando, FL. Association for Computing Machinery. Call: (708)850-7843.

July 27–29 Object World Conference. San Francisco. Smith & Shows. Call: (508)820-8658.

July 31 ACP Computer Swap Meet. 1310 E. Edinger, Santa Ana. ACP. Call: (714)558-8813.

July 31 Computer Show And Sale. Antelope Valley Fairgrounds, Lancaster. MarketPro Shows. Call: (415)456-6730.

AUGUST

August 1–5 Tools USA Conference. Santa Cruz. Smith & Shows. Call: 1-800-553-9939.

August 14 Computer Show And Sale. Community Center, Oxnard. MarketPro Shows. Call: (415)456-6730.

August 14–19 SCO Forum '94. Santa Cruz. Smith & Shows. Call: 1-800-553-9939.

August 17–21 ONE BBSCON. Atlanta, GA. ONE, Inc. Call: (303)693-5253.

August 20–21 Computer Show And Sale. Scottish Rite Center, San Diego. MarketPro Shows. Call: (415)456-6730.

August 21 Outdoor Computer Swap Meet. CSU, Northridge. Advertising Concepts Productions. Call: (805)520-1423.

SEPTEMBER

September 10 California Computer Show And Sale. Anaheim Stadium. Robert Austin Corp. Call: (415)347-0100.

September 11 Outdoor Computer Swap Meet. CSU, Northridge. Advertising Concepts Productions. Call: (805)520-1423.

OCTOBER

October 9 Outdoor Computer Swap Meet. CSU, Northridge. Advertising Concepts Productions. Call: (805)520-1423.

October 11–13 Multimedia Expo. San Francisco. Smith & Shows. Call: (212)226-4141.

October 22–23 International Computer Show And Sale. Pasadena Center. R.G. Canning. (213)587-1500, Event Ext. 4; (909)628-4236, Event Ext. 50.

NOVEMBER

November 2–3 PageMaker Conference. Los Angeles. Thunder Lizard Productions. Call: (206)285-0305.

November 14–18 COMDEX Conference. Las Vegas, NV. Smith & Shows. Call: (617)449-6600.

DECEMBER

December 12–14 DECUS Conference. Anaheim. Smith & Shows. Call: 1-800-842-7220.

CLASSES, SEMINARS, WORKSHOPS

JUNE

June 11 How To Join The Digital Revolution Class. Los Angeles. American Film Institute. Call: Nick DeMartino, (213)856-7690.

June 14–17 CD-ROM Development Workshop: From Multimedia Publishing To Data Archival Class. Los Angeles. UCLA Extension. Call: (310)825-3344.

June 20 AutoCAD Release 12 Class. Laguna Hills. Computer Education Institute. Call: (714)472-4192.

June 20 Novell System Manager Class. Laguna Hills. Computer Education Institute. Call: (714)472-4192.

June 20–24 Train The Trainer In ISO 9000 Seminar. Los Angeles. Perry Johnson, Inc. Call: Tom Parker, 1-800-479-2020 or (310)607-0222.

June 21 C And C++ Programming Class. Laguna Hills. Computer Education Institute. Call: (714)472-4192.

June 21–22 Understanding Broadband Networks Seminar. LA Airport Marriott, Los Angeles. Ascom Timeplex, RAD Data Communications, Northern Telecom. Call: 1-800-643-4668.

June 22–23 MS Word 6.0 For Windows Class. Laguna Hills. Computer Education Institute. Call: (714)472-4192.

June 23–24 Understanding Data Communications Seminar. Anaheim. Data-Tech Institute. Call: (201)478-5400.

June 27 Microsoft Word For Windows: A Practical One-Day Workshop. Los Angeles. UCLA Extension. Call: (310)206-1638 or 206-7252.

June 27–28 Advanced Troubleshooting For The Macintosh Seminar. Costa Mesa. Data-Tech Institute. Call: (201)478-5400.

June 27–28 Ami Pro Class. Laguna Hills. Computer Education Institute. Call: (714)472-4192.

June 28–September 13 Desktop Publishing With WordPerfect: Special Topics Class. Los Angeles. UCLA Extension. Call: (310)206-1638 or 206-7252.

June 28–September 13 Interactive Multimedia Tools (MacroMedia Director, Adobe Premiere, And Apple Media Tool) Class. Los Angeles. UCLA Extension. Call: (310)206-1422.

June 29–30 Advanced EDI Architecture Workshop. Los Angeles. UCLA Extension. Call: (310)206-1638 or 206-7252.

June 29–August 3 Paradox For Windows Class. Los Angeles. UCLA Extension. Call: (310)206-1638 or 206-7252.

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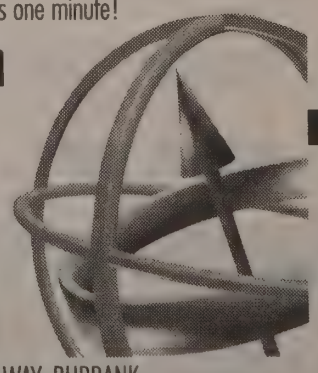

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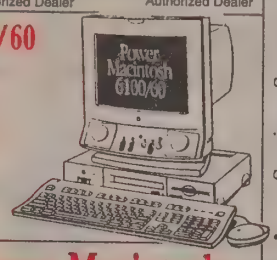

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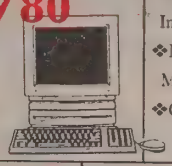

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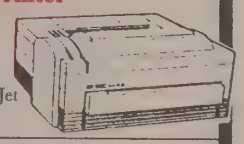

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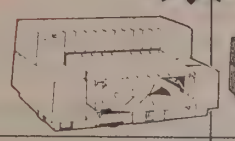

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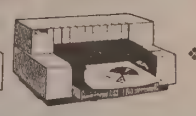

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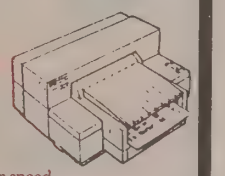

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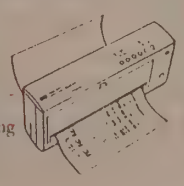

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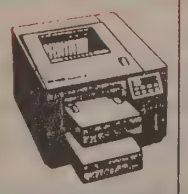

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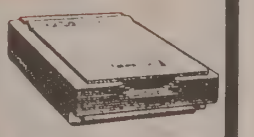

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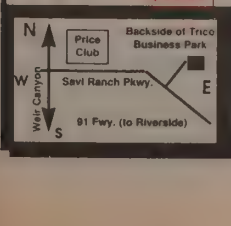

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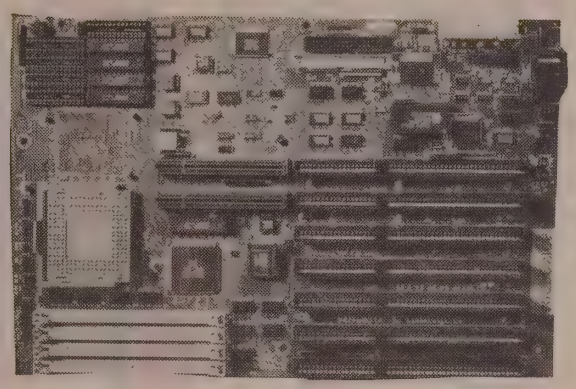

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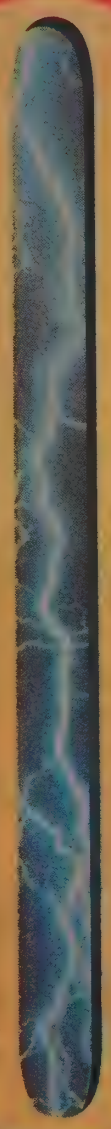

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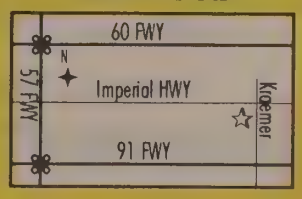

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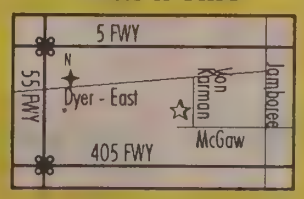

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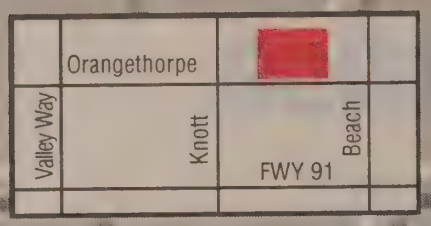

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BBS Spotlight

By John Wolcott

The Realm Of Wizardry

A recent Times Survey poll found that one in three American households have some type of computer. It is unclear how many people really put their systems to use at their full potential. Are you one of those computer users who only dabbles in word processing; only if you really have to? For shame! Modem prices are now lower than ever. If you do not have a modem, one can be purchased, with the respectable speed of 14,400bps, for less than $100. Maybe you're one of those who bought a system with a modem because you thought it would be a neat thing to have; but haven't used it yet. Either way, recognize the need to step beyond your current limitations. Break out the modem and communication software manuals and get online!

A great place to start your modem experience is with a BBS that does not require a subscription. This month's BBS Spotlight examines just such a BBS; Wizardry BBS is located in Calabasas. It offers the standard array of features that will acquaint you with using your modem, in a friendly way. Wizardry originally started way back in September of 1983 and has been a long-standing service to the computer community. The sysop, known as The Wizard, gladly provides this service. He welcomes new users and boasts a friendly user base.

The system has only one incoming phone line, which can limit accessibility during peak calling times. Persistence will get you connected. System hardware includes an Atari Mega ST 2 with 230MB of hard drive storage running on a US Robotics HST Dual Standard 14,400bps modem. The BBS is supported by Transcendence software.

Getting started on the system is an easy chore. Following the basic registration questions, you will view some of the system's guidelines. Then you'll be politely asked, "Wouldth thou like to read thy scriptures?" The "scriptures" are a system bulletin. This is recommended reading and will provide you with system news and special operational tips. You will have limited time on Wizardry until the registration information you have given has been verified by the sysop; usually within twenty-four hours. You will be allotted even more time on the system for doing things that make bulletin board system operators happy. These include leaving email for other users, uploading files (transmitting shareware programs for other system users), playing online games, and generally staying active in the system.

The email feature will allow you to communicate with other system users. It is easy to use and provides users a sense of belonging. If you need a BBS tip or two, this is a great place to get it, drawing from the experience of BBS veterans.

The File Library primarily supports the IBM/PC compatible format. You will be able to select file download choices from various sections of the library including communications, utilities, sound, and picture files. Contributing files to the system for other users is a requirement on Wizardry. You'll always be able to take more than you give, but sharing what you have found on other BBSes will help other users in staying current with the latest versions of shareware files.

The online game titles are sure to interest even the most timid BBS user. Online games offer an opportunity to role-play in varied fantasy lands. Games offered here include Space Empire, Dungeons and Dragons, BBS Hacker, and Assassin, to name a few. You may find yourself lost for hours; navigating this challenging pastime.

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486DX4-100 M/B w/256K Cache (72 PINS) No CPU	$105
GENOA VLB486DX-33/66 M/B w/256K Cache No CPU	$115
IBM 486SLC2-66 VESA w/64K w/CPU	$255

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NEC 3V 15" SVGA .28 N/L	$495
NEC 3FGE 15" SVGA .28 N/L	$595
NEC 4FGE 15" SVGA .28 N/L	$665
NEC 5FGP 17" SVGA .28 N/L	$1195
NEC 6FGP 17" SVGA .28 N/L	$2145

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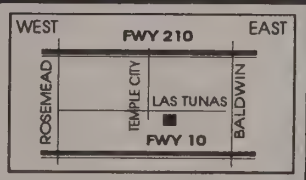

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213

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LAAUGLine BBS. (213)387-1002. BBS of the Los Angeles Amiga User Group. [Exp. #126.]

LA Collect. (213)661-6299. 8-N-1, 24 hrs., up to 14,400. Civic network, serious talk, new BBS technology, all welcome. Free. Sysop: Roger Eaton. [Exp. #125.]

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Dejavu BBS. (310)218-3561, 218-3562. 8-N-1, 24 hrs., 2400/14,400. Matchmaker, games, adult files, email, chat, Vietnamese/Chinese/ Asian guys and gals welcome. Free. [Exp. #124.]

The Great CHR$(27) BBS. (310)693-7907. 24 hrs., Programming files, all languages, shareware, code samples, tech talk. No fees or ratio. Sysop: Alan Selmanaj. [Exp. #126.]

Independent Filmmakers Forum. (310)425-0012. 8-N-1, 24 hrs., 2400/9600/ 14,400. Multiline, entertainment industry forums, shareware galore, multiuser games, chat. Free trial. Sysop: The Administrator. [Exp. #126.]

One World. (310)372-0987. Ecology, gardening, health, alternative news, international network. Free. [Exp. #126.]

Original Apple Corps BBS. (310)454-4660. Apple II support. Sysop: Ed Molina. [Exp. #126.]

the original off-off broadway BBS. (310)453-7038. 8-N-1, 24 hrs., 300–9600. Nonsubscription, text files/messages only. Using MajorBBS software and CompuCom Speedmodem. Sysop: James Gossage. [Exp. #126.]

South Bay Apple Mac User Group BBS. (310)792-8083, 792-0264. 24 hrs., Multiline,

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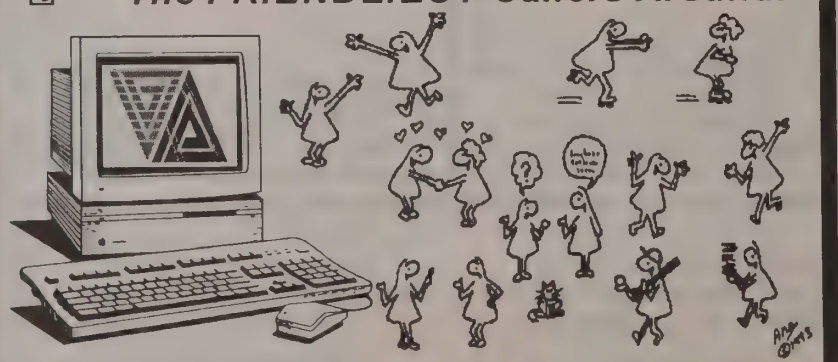

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714

Alzheimer's BBS Of O.C. (714)731-3045. 8-N-1, 24 hrs., 2400. Info on day care, support groups, respite care services, articles, and related info. Non-sub, text files and msgs only. Sysop: Vladimir Ostapowicz. [Exp. #126.]

Bits And Bytes Of Orange. (714)921-0480, 921-0484 (28.8), 921-0587 (14.4), 921-0591 (14.4 & 2400). 24 hrs., 2400–28,800. 9+GB of shareware, games, email, adult section, and USA Today. Sysop: Barly Redstar. [Exp. #126]

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Global BBS. (714)373-1544. 24 hrs., 300–14,400. Political forums and organizations, worldwide VirtualNET, backpacking forums. No fees. Sysops: Chris and Jarome. [Exp. #126.]

Graphics Development Association. (714)651-1812. 8-N-1, 24 hrs., 14,400. Supports graphics, BMP, adult GIF, CAD, POV, ANSI. Free and subscription. [Exp. #126.]

Independent Computer Consultants Association. (714)871-3232. Forums, files, referrals. Free to all members of the general public. Sysop: Kenneth O. Leland. [Exp. #124.]

Infinity BBS. (714)898-3236. 8-N-1, 24 hrs., 300–14,400. Internet, Usenet, satellite fed shareware, games, teleconference, call today! Sysop: Dan Minear (suitcase). [Exp. #125.]

MacShak BBS. (714)373-0656. 24 hrs., 2400. Newly expanded Mac, amateur radio, consumer, and adult interests. Sysop: Dude B Narley. [Exp. #126.]

Matching Services, Inc. (714)840-5380. Online retrieval of single men and women including photos. 1-900-VIGORUS,,, 2222222222. [Exp. #126.]

Real Estate Online. (714)969-9624. 8-N-1, 24 hrs., 2400–14,400. 14 lines. ANSI and RIP, free realty info + over 200 Majornet forums, email, chat, games. Sysop: Doug Campbell. [Exp. #126.]

Sherlocktron. (714)492-0724. 8-N-1, 24 hrs., 2400. Sherlock Holmes BBS with lists of societies, publications, and purveyors. Sysop: Willis G. Frick. [Exp. #126.]

Software Gallery BBS. (714)721-8751. 2400–19,200. Largest file base in Calif. Games, utils, Win, DOS, CD-ROMs. Free access. Sysop: Joseph Brian. [Exp. #126.]

Viewlink BBS. (714)650-4612. 8-N-1, 24 hrs., 14,400. Latest shareware, hottest adult GIFs, temp jobs. 28¢ per hour. Sysop: Terry Andrews. [Exp. #126.]

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805

The Late Show! (805)832-6173. 24 hrs., 14,400. 25,000+ files, three nodes. Echomail, political discussions, adult-related files. Intelec, UnitedNet/ RaceNet, CompuLink, NightNet, JixNet, and AbuNet. $10 per year and up. Sysop: Terry Moore. [Exp. #124.]

818

Alternate Lifestyles BBS. (818)287-9285. 8-N-1. No one under 21 allowed, running six lines. We cater to all sexual lifestyles. Call for free trial. Sysop: Steven Keys. [Exp. #126.]

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Compu-Ad Information Network. (818)858-2763. 2400–19,200. Online real-time graphic listings of real estate, loan info, school info, and more. Free. Sysop: Richard Belleville. [Exp. #125.]

InvestorLink. (818)331-4611. 8-N-1, 24 hrs., 2400. Stocks, mutual funds, real estate, personal finance, daily news, commodity prices. Free. Sysop: Steve Painter. [Exp. #126.]

Momby Online. (818)912-7867. 8-N-1, 24 hrs., 2400/9600/14,400. Online children's stuff and other educational products. Free unlimited use. [Exp. #124.]

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714/452-9166 (South Orange County, San Clemente)
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AMIGA

ATUG—San Gabriel Valley. Meetings: last Tues., 7:00 pm, Michelangelo's Pizza, San Dimas; 3rd Sat., 11:00 am, 1st Southern Baptist Church, Temple City. Call: Steve, (818)285-6424. [Exp. #124.]

LAAUG—Los Angeles Amiga User Group. Meetings: 3rd Wednesday, 7:30 pm. Veteran's Memorial Auditorium, Overland Ave. & Culver Blvd. Super SIGs, PD disks. Call: Gene Edwards, (213)384-8711. LAAUGLine BBS: (213)387-1002. [Exp. #129.]

APPLE

Champions Of The Mac Proletariat (CHOMP). Meetings: 4th Thurs., 7:30 pm, Cal Poly Pomona. Question and answer, raffle of useful software, opportunity to purchase disks. Call: Craig Richards, (909)985-7385 or Mitch Cohen, (909)598-5766. [Exp. #129.]

Original Apple Corps. Meetings: 2nd Sun., West LA area. Apple II and Mac user group. Support for beginners through experts. Call: Fred Duffy, (310)450-3336. [Exp. #129.]

ATARI

South Bay All Computer Enthusiasts. Meetings: 2nd Tues., 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita (1 block W of Western). All skill levels. Call: Danny or Mary, (310)834-0040. [Exp. #128.]

COMMODORE

Commodore Technical Users Group (C=TUG). Meetings: 4th Sunday, 1:00 pm, Senior Citizen Center, 170 S. Olive St., Orange. Public domain library, documents library, and magazine. Software and hardware help. Call: Daniel, (714)871-7570. [Exp. #128.]

CORELDRAW

Corel (ACAD) User Group. Meetings: 2nd to last Tues., 7:00 pm, Glendale Federal Bank Building, 401 N. Blvd. Product demos, Q&A. Call: Art, (213)935-1958. [Exp. #124.]

LA Westside CorelDRAW User Group (independent). Meetings: 2nd Tues., 7:30 pm, 26th and Wilshire, Santa Monica. Speakers on design and printing, CorelDRAW tutorials, and favorite shareware. Call: Michael, (310)337-9347. [Exp. #128.]

IBM & COMPATIBLES

Greater South Bay PC User Group. Meetings: 2nd Thurs., 7:30 pm, Torrance Recreation Center located behind the main city library, Torrance. Visitors welcome. Call: (310)329-2804. [Exp. #128.]

Long Beach IBM PC And Compatibles Users Group. Meetings: 3rd Wed., 7:00 pm, Masonic Temple, 1120 E. Market St., Long Beach. Novice and experienced welcome, BBS, public domain library, newsletter, SIGs. $25/year, $35 for families. Call: Jim Wells, (310)439-7114. [Exp. #128.]

San Bernardino PC Users Group. Meetings: 1st Wednesday, Jack Brown Hall, Rm. 129, Cal State University, San Bernardino. Specializing in IBM and compatibles. Free admission. Call: Arthur Saltzman, (909)880-5755. [Exp. #127.]

Software Users Group Of O.C. Meetings: monthly in Irvine. Serves IBM compatible users who are new to computers. Call: (714)721-8751 (modem). [Exp. #129.]

South Bay All Computer Enthusiasts. Meetings: 2nd Tues., 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita (1 block W of Western). All skill levels. Call: Danny or Mary, (310)834-0040. [Exp. #128.]

TUG-NET. Meetings: Every Thurs., 7:00 pm, Glendale Federal Bank, 7119 Topanga Cyn., Canoga Park. Ample parking. Call: (818)249-1629. [Exp. #126.]

Valley Computer Club. Meetings: 1st Wed., 7:00 pm, Burbank Board of Realtors Bldg., 2006 W. Magnolia, Burbank. BBS, PD library, SIGs, newsletter. All welcome. Fee, $4. Call: Estella McClintock, (818)848-1948 or Grayce Hruda, (818)842-3707. [Exp. #129.]

KAYPRO

KAYOS Kaypro User Group. Meetings: 4th Mon. of even months, 6:00 pm, El Segundo Library, Mariposa and Richmond streets. Call: (310)379-8339. [Exp. #128.]

MACINTOSH

Champions Of The Mac Proletariat (CHOMP). Meetings: 4th Thurs., 7:30 pm, Cal Poly Pomona, grey building near administration building, rm. P2-7. Call: Craig Richards (909)985-7385 or Mitch Cohen, (909)598-5766. [Exp. #129.]

Los Angeles Macintosh Group (LAMG). Meetings: 3rd Tues., 7:30 pm, Dept. of Water & Power, 111 N. Hope St. Free meeting, everyone welcome. Call: (310)278-LAMG. [Exp. #128.]

Original Apple Corps. Meetings: West LA area. Apple II and Mac user group. Support for beginners through experts. Call: Fred Duffy, (310)450-3336. [Exp. #128.]

South Bay Apple Macintosh User Group. Meetings: Last Wed., 8:00 pm, El Camino College, MCSC Rm. 100, 16007 Crenshaw Blvd., Torrance. Call: (310)644-3315. [Exp. #128.]

West Orange County Macintosh User Group (WOCMUG). Meetings: last Tues., 7:00 pm, Emerson Elementary School, 2625 Josie, Long Beach (NE corner of Palo Verde and Willow). Come and join with other Mac users to share knowledge and experiences. Call: Lynn Goodrich, (714)892-8910; or Tony Muller (310)493-1240. [Exp. #127.]

PROGRAMMING

Software Toolsmiths. Meetings: Last Sat., 10:00 am, Joslyn Center, 339 Sheldon St., El Segundo, CA. Discussion and tutorials on programming, including C++, Forth, J, Smalltalk, algorithms, operating systems, and hardware. Neophytes welcome. Call: John LuValle, (818)797-1820; or Howard Rogers, (310)532-3342. [Exp. #124.]

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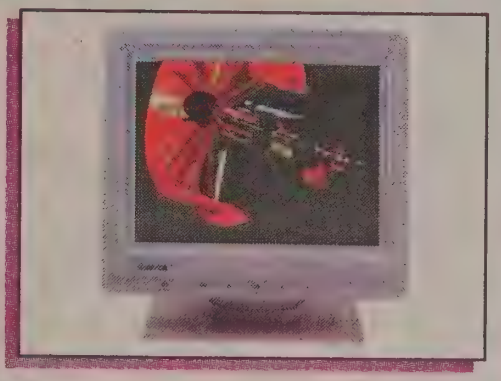

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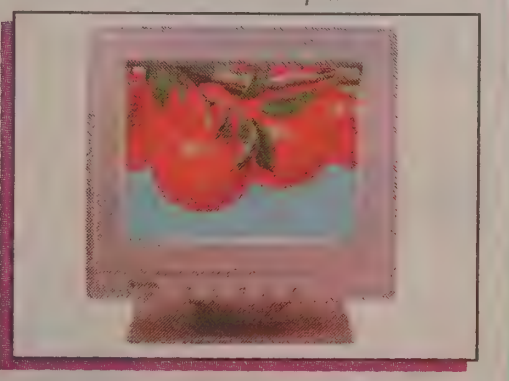

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Independent Computer Consultants Association, Los Angeles Chapter. Meetings: 1st Thurs., 6:00 pm. Prepaid reservation, $25, or at the door, $35. The LA chapter provides referral services. Call: (213)872-1811. [Exp. #127.]

Software Council Of Southern California. A nonprofit trade association whose membership is comprised of software development organizations, as well as companies providing support and services to the local software industry. Call: Arlene Munson, (310)328-0043. [Exp. #127.]

Southern California Computer Society. Meetings: 4th Tues., 7:00 pm, Farmers & Merchants Bank, 12535 Seal Beach Blvd., Rossmoor, on southern side of Rossmoor shopping area. Call: Hank Burwash, (310)596-9670. We welcome all who are interested in computers. BBS and monthly newsletter. $15 dues per year. [Exp. #124.]

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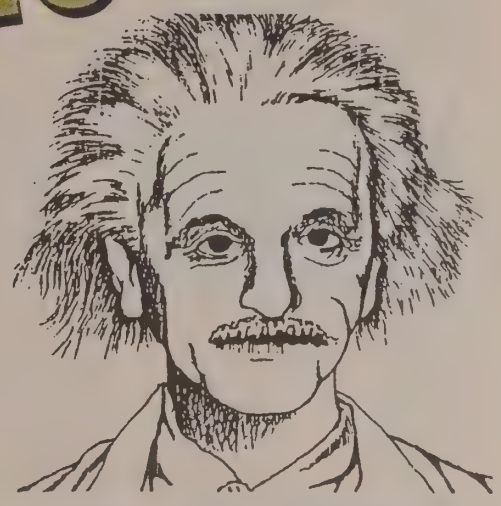

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Multi & Media

MULTIMEDIA 101

Shifting Gears

BY JONATHAN E.

Three events over the past three months illustrate different aspects of the widespread efforts to get the multimedia juggernaut out of first gear and up to speed on the highway.

EDUCATIONAL REVOLUTION

The International Interactive Communications Society (IICS), in its April meeting at the California Academy of Science, focused on the future of the multimedia industry in education. Mark Heyer, Brenda Laurel, and Larry Magid of the *Los Angeles Times* were the panelists and Jerry Kay of the Academy and National Public Radio was the moderator. The mood of the meeting circled between lighthearted joking, serious concern, pessimism, and calls for revolution.

Things got off to a lively start when Kay asked the panelists the leading question of what the future might be, given the dichotomy between the promises we hear of a technology-based learning environment and the financial difficulties schools currently deal with, which means among other things a shortage of phone lines. Mark Heyer immediately scored a big laugh with his "God knows" response and then revealed his revolutionary aspirations for new forms of interactivity by saying that "the forty-year television nightmare is over and we should lump schools in that category."

Brenda Laurel admitted to having a "cynical week," observing that the Internet connection to a school, if there is one, is generally for the principal and not for the students. She went on to note that many CD-ROMs and multimedia learning materials "simulate experiments" and do not allow students to really explore science for themselves. She feared that this reflects "a false epistemology about interactivity." The real aim of multimedia, she declared, is to achieve "parity with broadcasting" through extensive networking.

Larry Magid commented that "multimedia has had close to zero impact at my kids' school" despite his

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donations of review copies of CD-ROMs to the school. He identified the real problems at the school as originating in social problems outside the school, leading to fighting in the halls and students without money to buy lunch. He said the students are illiterate about not only computers but also books and maps. Magid believes we might be in a situation where the Silicon Valley computer industry is "globally connected but locally disconnected."

The evening continued in a revolutionary vein of discontent with the current system of education and ideas for how multimedia, if used properly, could improve things. The essential requirement is to use it as a networking communications medium rather than simply as a new way to broadcast in the same old top-down model. As Laurel put it, "What counts is that the children get to have a voice." From both this event and other indications, it is becoming increasingly clear that the real meaning of interactivity is not point-and-click but people-to-people. How this will come about remains unclear, especially in educational institutions with their traditional hierarchical structures and under current social and economic conditions (though one member of the audience pointed out that things are not so bad in some other states). The members of the IICS are calling for some radical changes in the ways learning is done. Laurel was explicit that this involves "an economic revolution" and that "the replacement is up to us." My favorite line of the evening, attributed to Alan Kay, was both amusing and cautionary: "Attitude is worth 80 IQ points." Looks like we're in for a bumpy ride.

It is becoming increasingly clear that the real meaning of interactivity is not point-and-click but people-to-people.

"KILLER" CONTENT

So, for something completely different, I went to "Killer" Content, "a special networking seminar to explore multimedia applications, network with industry leaders, and engage with Award-Winning Media Moguls as They Share Insights About Delivering Compelling Content" (sic), an event hosted by the Multimedia Development Group and Pacific Bell in the San Francisco Marriott Hotel Grand Ballroom. The crowd at this event certainly did not look like revolutionaries. In fact—please excuse the expression—they looked like "suits," junior execs of both sexes, or perhaps straitlaced, trust-funded entrepreneurs.

The panelists on this occasion mostly came from at least semi-traditional media. Ed Saxon is a movie producer with *Silence of the Lambs* and *Philadelphia* among his credits. Steve Peterman is the producer of the *Murphy Brown* television show. Susan Brown is a print and new media consultant and president of Deep Content Solutions in Berkeley. Tom Lombardo is executive vice president of Whittle Communications Medical News Network. Scott Rosenfelt is another movie producer with *Home Alone* under his belt, as well as *ShadowCatcher*, billed as the first live-action interactive title. Garry Hare was the most cyber-active panelist as president of the Griffin Fathom Company, producers of *Escape From Cyber City* and *ABC Presents the Palm Springs Open*. Roland Wolfram and Hal Logan, both of Pacific Telesis, acted as moderators.

Wolfram reported that Pacific Bell plans to invest $16 billion in building its portion of the information superhighway and promised that its goals are for it to be "on-demand and innovative." He was also quite up-front in warning that if there is no compelling content to access, it won't work.

Steve Peterman immediately announced that he thinks the pipeline is secondary, that he doesn't know much about interactivity, and that he comes at things from an artistic standpoint. He feels that a danger for multimedia is that it will remain suitable only for primitive games, that without good content, it will be limited to games and educational tools. On the other hand, it could grow in fascinating ways and take on a life of its own. The key will be to "take subject matter that matters." He illustrated his concept with a clip from *Murphy Brown*, pointing out that laughter is recognition of a conversation or an experience you've had, something that matters to you. The most revealing detail he mentioned was that one of the lines in the clip took ten writers three and a half hours to get right. *Murphy Brown*'s producers do use a form of interactivity in that they check the electronic conferencing systems after a show to see what worked well and how the audience feels about plot development; this, by its very nature, is a more democratic process than older forms of measuring audience response.

Ed Saxon finds the idea of interactive media appealing. To make "killer" content work, he stated that it is necessary to "find the truth in human experience." This means that "the devil is in the details." One of the most important techniques for ensuring that you have "killer" content is to throw anything "non-killer" out, even material you've put a lot of work into. The rule of thumb is "When in doubt, throw it out." He showed a clip that didn't make it into the final version of *Silence of the Lambs*. It cost, he said, $100,000. He showed the clip that did make it into the final version. It was obvious what he was talking about. He closed by saying that digital media need "scribes and poets-people who can show on the page what will touch people on the screen."

After these two presentations, Susan Margolis was at a slight disadvantage without a video to show. However, she made a convincing case for her "Twelve-Step Program" for ensuring that you do have what she calls deep content, compelling content that touches the senses, the emo-

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tions, and the mind. The twelve essential features that any media must offer to be compelling are good raw material, passion, vision, personality, fame potential, playfulness, challenge, psychological intimacy, surprise, news, payoff, and The Ring of Truth. She noted that multimedia is not appropriate for every message and that the urge to be original is vital.

Whittle Communications Medical News Network is a very specialized satellite television service for primary-care physicians. Tom Lombardo explained how the service was set up in some detail and showed fairly gruesome examples of what constituted "killer" content for its audience. "The key," he said, "is to define the audience very tightly." He demonstrated how that audience was catered to by the anchor person and covered how the potential conflict-of-interest issues were dealt with (if an advertiser is the subject of a news story, its ads are yanked for the day). One way the service is interactive is that the physician can request further details or samples from advertisers—any response required from the physician can be accomplished with the push of only one button. This and all other features were the results of extensive pre-launch testing.

Scott Rosenfelt showed a lengthy clip from *Home Alone*, inadvertently illustrating Lombardo's point of defining your audience. The movie was clearly made for kids. However, he also made the worthy point that media producers have a certain responsibility and that gratuitous violence should be avoided. Garry Hare said that he was striving for something new with his productions and noted that while people are interested in technology, CD-ROMs are not going to replace anything. His advice to would-be producers is to understand the structure of what you're trying to do. He laughed that "we steal everything and call it research."

I had gone into this seminar with a somewhat cynical attitude about what these "old-media" producers could offer the brave new digital dawn. I left with a new appreciation of the skills and talents necessary to make even linear media. As Rosenfelt commented after the *Murphy Brown* clip, "It's hard to create something that comes off the screen and makes you laugh." The evening offered quite a challenge and a lot of information to the crowd. If a revolution is to occur, this audience now knows some more of what is needed for success.

If any industry has undergone a series of revolutions, it's the music business. Not only do styles and trends of music change at regular intervals, but the media with which music is delivered to consumers change fairly frequently.

MUSIC & MULTIMEDIA '94

If any industry has undergone a series of revolutions, it's the music business. Not only do styles and trends of music change at regular intervals, but the media with which music is delivered to consumers change fairly frequently. While music continues to be culturally significant, it's also an industry that is comparatively flat in terms of revenue. Thus, it's no surprise that the music industry is trying hard to figure out what multimedia is all about. Music & Multimedia '94 was a daylong series of panel discussions and product presentations held at the Castro Theater on May 7 in association with the San Francisco International Film Festival. It might be considered one of the acid tests of the '90s, more from the point of view of the presenters than of the audience. Most of the titles shown are not yet on the market, some are only in the early stages of development—I was impressed that so many developers had the courage to stick their necks out in public.

The only panel I attended was "The Record of the Future," which broke down into a rather silly wrangle about royalties, although it was amusing to hear Todd Rundgren introduce himself with "I invented interactive music." Jeff "Skunk" Baxter made the good point that multimedia is waiting for someone to twist the technology as DJs did with scratching vinyl records (which, incidentally, foreshadowed sampling). I was amazed to hear Tom McGrew of Compton's New Media (remember the patent claim?) say that the industry is "forcing models that don't exist on markets that aren't here yet." Given the response this remark drew, Compton's should consider issuing their execs with bullet-proof vests for public appearances—or maybe they're thick-skinned enough as it is.

Todd Rundgren actually made a reasonable case for his claim with his presentation of No World Order. It does what he wants it to do, "giving the listener different places to stand" and clearly does not have to be enjoyed "in an office chair." While it does have some limitations in what the user can do with it, it is also remarkably flexible. As Rundgren observed, "instant creativity is a bogus myth," but he has given some creative options to the listener. The only other demonstration with comparable capabilities was Thomas Dolby's AVRe, which basically creates different music in a game depending on the ways a player moves the mouse and the game-playing style (fast/slow, a few or lots of clicks).

The major highlight of the evening was Joe Sparks' demonstration of Total Distortion. He was plagued by equipment

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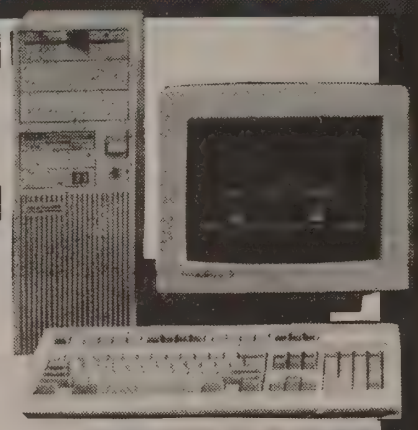

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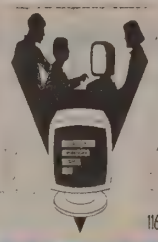

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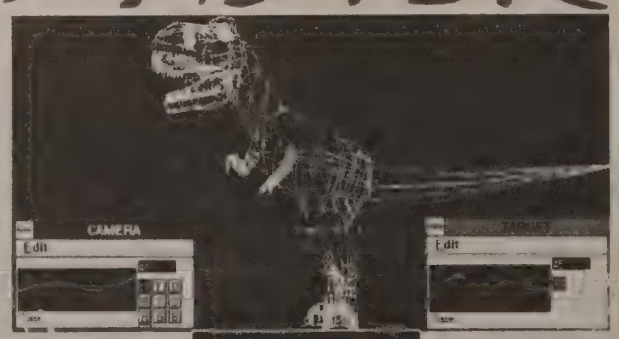

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problems, but the imagination and wit that he and his team have put into the "adventure game" shone through bright and clear. Equally important, it has a certain attitude, a style, that engages one in the same way a good piece of work in any other medium does. The audience responded with more enthusiasm than for any other presentation.

Steven Rappaport demonstrated a very early prototype of Interactive Records' What's That Song? In fact, it was such an early prototype that he signed the publishing contract with Sanctuary Woods, the publisher, onstage, having literally wrapped up the final details only that afternoon. What's That Song? is a quiz game based on pop music. Its success will depend on getting all the details right in the final production, but, while the presentation was a little corny, it looked like it will be fun to play.

Tony Bove showed off Haight-Ashbury in the Sixties and I was pleasantly impressed. Obviously, it's a historical piece—what appeared to make it work was the content, written and edited by Allen Cohen, the original editor of the *Oracle* and an organizer of the first Human Be-In.

Other demonstrations I caught included: Ty Roberts with David Bowie Jump, a video-remixing project that paled beside Total Distortion; Xplora 1: Peter Gabriel's Secret World from Brilliant Media, about which reams have already been written including the February version of this column, suffice it to say that it does some things very well and leaves one hungry for more; Interactive [Whatever Prince calls himself these days], a sort of Myst for Prince fans. The other products shown that I saw were what I call coffee-table multimedia, big glossy productions that collect a lot of video and sound from the past and stick it together on a disc: The *Tommy* CD-ROM about Pete Townsend's epiphany; Grammy's Interactive, John Lennon's Imagine; and Heart: 20 Years of Rock and Roll, a fan-oriented scrapbook. Based on these short glimpses, this approach is closer to print publishing or documentary video than the future of music.

So is there a revolution coming in the music business? To quote Columbia's publicity slogan from the Summer of Love: "The man can't take our music." ■

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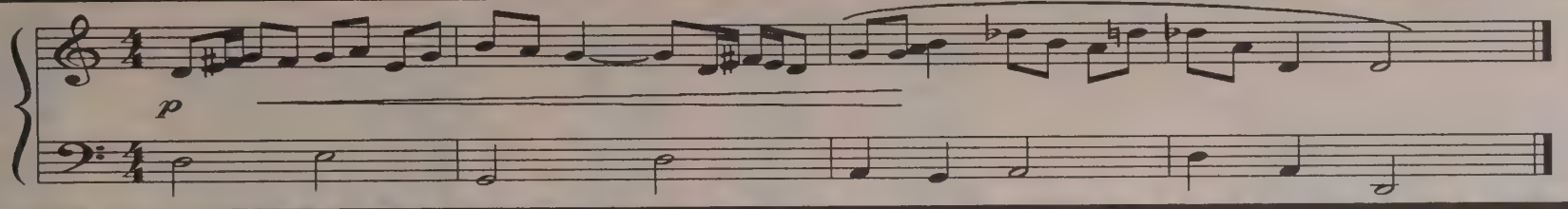

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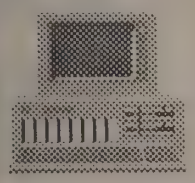

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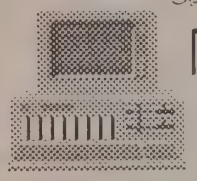

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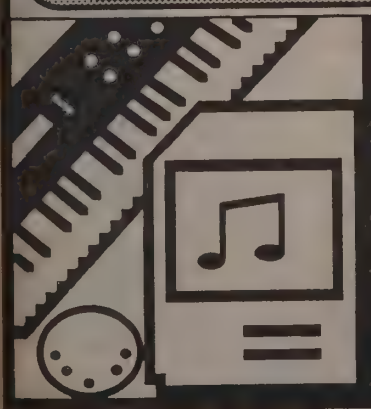

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Can The Amiga Survive?

As Commodore Faces A Bleak Future, The Amiga Community Holds Its Breath, Ponders Options

"Commodore International Ltd., a once high-flying personal computer maker, warned that it is on the verge of collapse and could be liquidated unless it secures new funding."

That warning appeared in the March 25th issue of the Wall Street Journal and became reality a month later on April 29th. According to a press release, the company's assets will be transferred to trustees for the benefit of creditors, and its main subsidiary, Commodore Electronics Ltd., was placed into voluntary liquidation. This is the initial phase of an orderly liquidation of both companies, which are incorporated in the Bahamas, by the Bahamas Supreme Court.

The trustees are two partners from the accounting firm Deloitte & Touche, Franklin Wilson and MacGregor Robertson; however, they are acting in their individual capacity, not as representatives of D&T. As trustees they have a fiduciary responsibility to get the maximum possible for the company's assets. Creditors are first in line for any distributed funds, followed by the shareholders. However, Commodore is so insolvent, it seems highly unlikely stockholders will see anything.

Anyone who's shocked that Commodore folded hasn't been paying attention. Barring a miracle, this was inevitable. I'm only surprised that it took so long. I have felt for a long time that Commodore was incapable of properly marketing the Amiga and their window of opportunity had closed. It would have cost big bucks to crack that window open, and they just didn't have it. The final nail in the coffin was pounded in when an injunction was placed on Commodore for non-payment of patent royalties, restricting the importation and sale of Amigas in the U.S. (Note this doesn't affect any stock already in the distribution pipeline.)

NO WHITE KNIGHT

Commodore was desperately hoping a white knight would step in and save them. However, no one did. Not, probably, that no one was interested. After all,

BY DOUGLAS J. NAKAKIHARA

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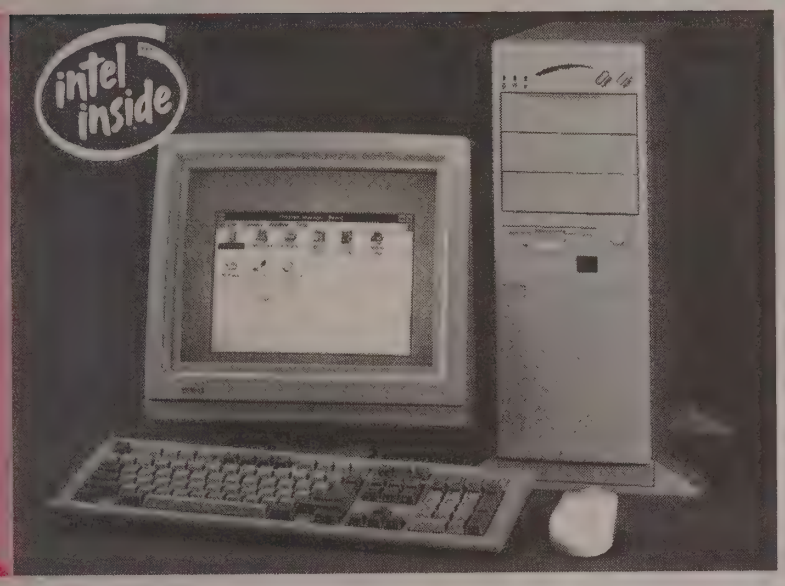

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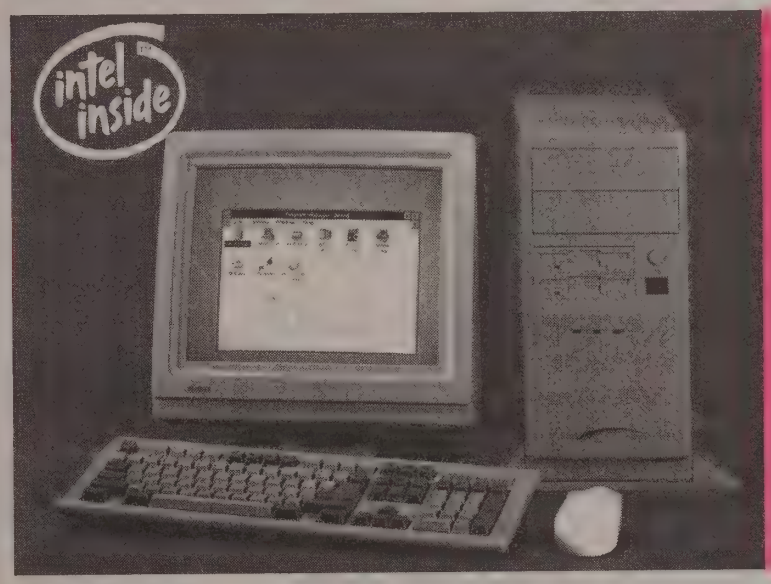

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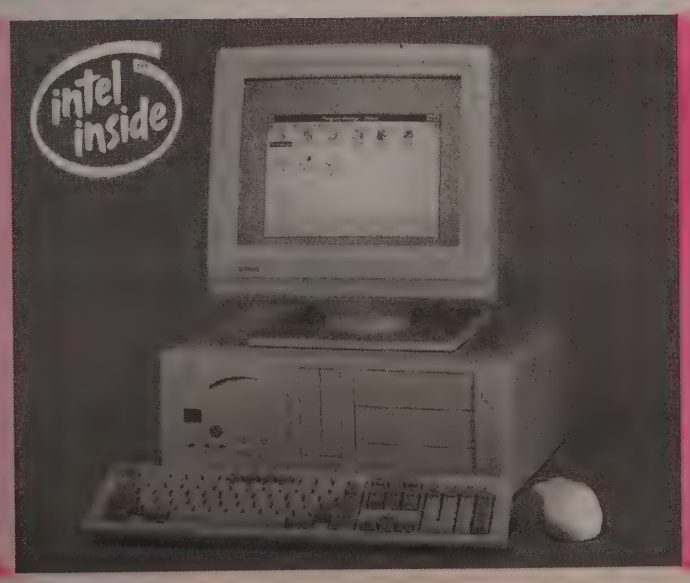

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reportedly Hewlett-Packard recently agreed to license the Amiga chip set for a television set-top box. More likely, potential suitors probably felt that the debt was too great to justify a purchase, merger, or any other type of pre-bankruptcy salvation.

The major Amiga developers, who have a vested interest in the situation, couldn't afford the debt. Deeper-pocketed companies likely felt that the cost didn't justify the risk. They would be looking for a bigger market than Amiga developers and that would have been very expensive to develop.

IT'S NOT OVER TILL IT'S OVER

A liquidation sale will be the trustees' last option, so efforts to sell the company are still being made. Serious meetings with the giant Korean conglomerate Samsung have been reported. These talks have progressed to the point that Samsung has supposedly made physical site inspections of some of Commodore's worldwide operations. NewTek President Tim Jenison was reportedly also called in to make a pitch on what NewTek is currently doing and planning for the Amiga platform. It's a good sign that talks have reached such advanced stages, but signing on the dotted line may be a long way off, if it even happens.

Purchasing the technology in a liquidation sale is an entirely different ball game. The corporate debt and sales injunction should be non-issues. Of course, all things being equal, the asking price will be higher, since the assets will be acquired without Commodore's debt.

The danger of liquidation is the possibility that Commodore's assets might be sold piecemeal to various buyers with differing goals. The main asset that Amiga-survivalists will want is the Amiga technology. However, they will also want at least some of the manufacturing operations. There may be competing bids for these operations for just their intrinsic value.

SHORT-TERM PROGNOSIS

SMG, which is handling Commodore warranty and repair work, apparently has a reasonable inventory of parts, except for motherboards. Furthermore, the main Amiga distributor, Creative Equipment International (CEI), has optomistically indicated that it has "sufficient Amiga inventory to meet demand until manufacturing can be resumed." (Distributors are the companies that sell products to the dealers; CEI appears to be the only one with any Amiga inventory.) From what I can piece together, this is only Amiga 4000s and monitors. Also, many developers are coming forward to state their continued support for the platform.

Scala announced that they will be offering what they call a "Scala Workstation," an Amiga 4000 with Scala MM300. The 4000s will come from Europe; the company reports it has enough inventory to last through the end of the year. The machines will have the Scala name covering the Commodore Amiga name plate.

NewTek has yet to take an active stance on the matter other than to state their continued support for the platform. Demo units of the Flyer, a non-linear editing product, are still scheduled to be shipped in July with shipment to end users early in the fall.

These actions have bought the Amiga some time. It is way too early to jump ship now. However, things will have to move swiftly. The body isn't cold and people have already begun to pay their last respects to the Amiga. I encourage you to "look" at the other platforms, but it will only make you pray harder that the Amiga survives.

What if a company that knows how to market a product gains control of the Amiga technology? That would be very exciting indeed, so stay tuned.

ON DECK

CEI has stated that it's been "working closely with Commodore management and major investors to find a resolution to the current financial crisis. Commodore's actions (declaring bankruptcy) now clear the way for progress to be made." Word has it that a core group of engineers is still employed at Commodore. Obviously this is being done to make it more attractive to someone interested in the technology—you can't have a *Jurassic Park 2* without Spielberg.

There's been a lot of speculation and rumors about various big companies being interested in the Amiga—Sony, H P, Epson, and even Philips. I honestly doubt that we'll see an Amiga with any of those names on it. As far as supporting a third computer platform is concerned, except for Philips, they probably realize that Windows-based PCs already have a stranglehold on the market. Philips has spent so much money hyping CD-I, I doubt they would be eager to adopt a totally incompatible format.

It does not appear that any single Amiga developer, like NewTek, Scala, or GVP, will be coming to the rescue either. However, perhaps a group of developers could pull it off. Moreover, I have it on good authority that at least two non-developer parties (not previously mentioned) are itching to step in and take over Amiga manufacturing, if either can get the rights to the technology!

There are rumors that all of this may be part of a plan for the current Commodore management to restructure and get out from under the debt. This is doubtful.

WHAT IF

Commodore really only had three main products that it actually manufactured: the Amiga 4000, 1200, and CD32. If Amiga operations are salvaged, I expect to see scaled-down and streamlined operations that may emphasize, if not concentrate solely, on the 4000. The 1200 and CD32 are low profit-margin mass market products and thus require substantial promotion to market properly. Unless the new owner has deep pockets, limited resources would be best served with the more profitable

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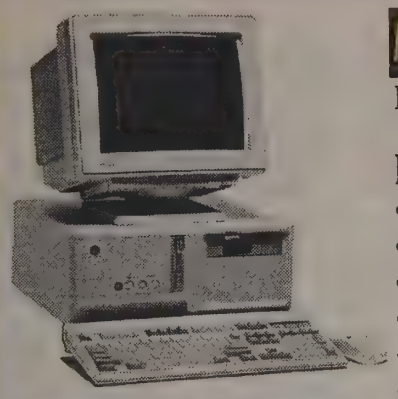

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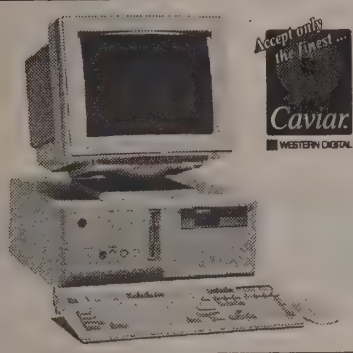

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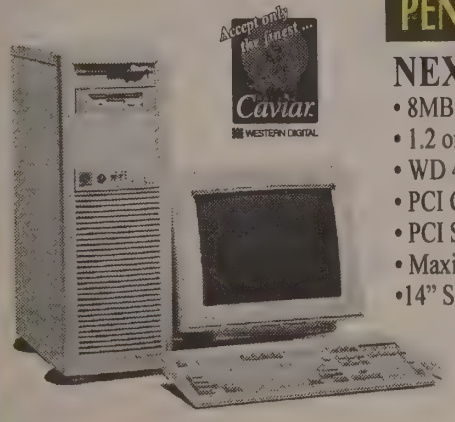

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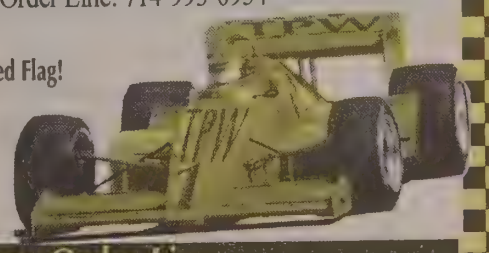

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4000 line, including the tower and economy versions.

It is important to recognize that the Amiga technology should also include products in development, not just shipping products. The next generation AAA chip set was very close to being ready back in January. Initially, whoever takes control of the Amiga will have to concentrate on current products. However, development and release of more powerful Amigas is important if the Amiga is to prosper long-term.

If the Amiga does survive, I'd forget any dreams of it becoming a mainstream or general purpose computer. It's a niche computer and most likely will stay that way. Every platform has its forte and the Amiga's just happens to be video, which has a narrow market—albeit a potentially profitable one. Sure Excel, Word, or Lotus 1-2-3 would run great on an Amiga, but PCs are just so darn cheap that it makes no sense for the major PC developers to port their wares to the Amiga. With the Mac, PowerMac, OS2, and Windows NT/4.0/3.1, a lot of developers are already supporting too many OSs. Besides, most serious professionals probably already have a PC or Mac. (This should be good for the handful of developers who market Amiga productivity applications though.)

There has been some talk about rewriting the Amiga OS so that it would run on something like the PowerMac or be totally hardware independent. How compatible this OS would be with current software is unknown. In recent years, Commodore had gone to great lengths to get developers to use standard system calls in writing their applications instead of "banging" the hardware with custom routines. Software that adhered to the rules would have a much higher chance of not breaking on the ported OS.

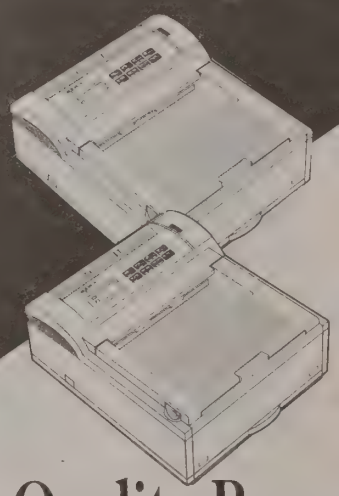
This would be quite an undertaking, but there are a lot of devoted Amiga owners out there. Many of them are ex-Commodore R&D people who know a lot about the nuts and bolts of the OS. Of course, hardware developers would have to rework their boards so they will physically plug into whatever machine the OS runs on.

AMIGA ALTERNATIVES

I've looked and I'm really having a hard time embracing either of the two major platforms, namely Windows and Macintosh. I really like the Mac since it is the closest kin to the Amiga. However, although Apple has reduced the price of their machines, I find that the peripherals and software continue to be expensive. I also really worry about Apple's long-term future: can it withstand the Windows tidal wave? It's getting worse with flagship Mac applications being ported to the Windows platform.

Sure, the new PowerMacs can run Windows, but this software-only emulation is an added cost, requires 16MB of RAM, and is too slow for serious users. It's not surprising that Windows emulation is slow, considering Windows runs pretty slow even

Continued on page 171



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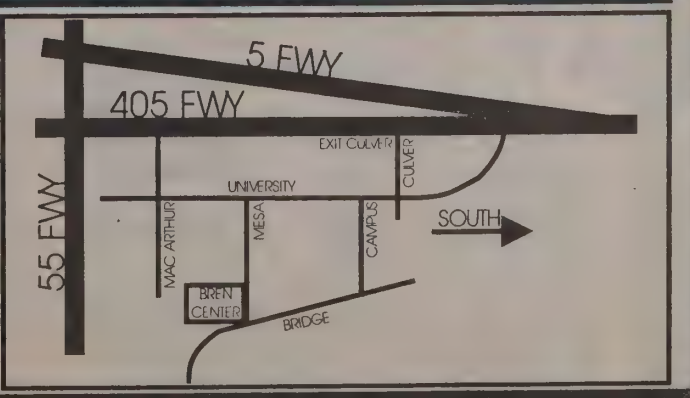

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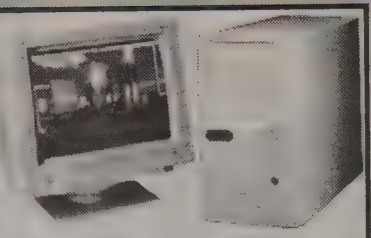

- Opti 486VLB MB w/128K w/ 2VLB Slots
- **486SX-33Mhz CPU**
- **4Mb RAM, 210Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- Trident 9200 VLB SVGA 1Mb Graphics Accelerator
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- 101 Key Enhanced Keyboard
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Vega 486/50 VLB Bus

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- **4Mb RAM, 250Mb HDD**
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- VLB IDE/FDD Controller
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Kenitec NP-602 Notebook

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Features:
486-33Mhz CPU, 4mb RAM, 130mb HDD,Built-in "Palm Rest" Trackball, 10" 32 Gray Scale VGA Compatible LCD Display, Internal 1.44Mb Floppy Disk Drive, Complete w/ Carrying Case & Charger.

ESSENCE 386DX 40Mhz

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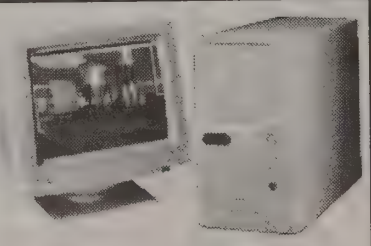

- Opti 386 Motherboard w/ 128K Cache, **AMD 386/40 or TI 486DLC/40 CPU**
- **4Mb RAM, 210Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- Fast 16-Bit SVGA 1Mb Graphics Accelerator
- 101 Key Enhanced Keyboard
- Mini-Vertical Case w/230Watt Power Supply
- **Monitor Optional.....**

IBM 486/66 VLB

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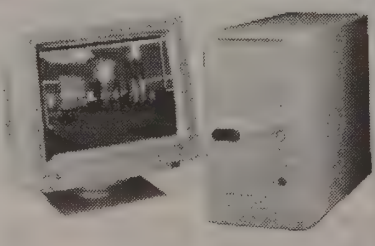

- IBM VLB Motherboard w/ IBM 486 SLC2-66Mhz CPU & Math- Coprocessor
- **4Mb RAM, 210Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
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- 101 Key Enhanced Keyboard
- Mini-Vertical Case w/230Watt Power Supply
- **Monitor Optional.....**

Kenitec DarkKrystle GX 486 256 Color

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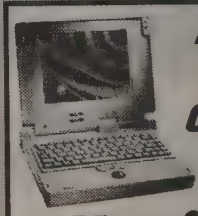
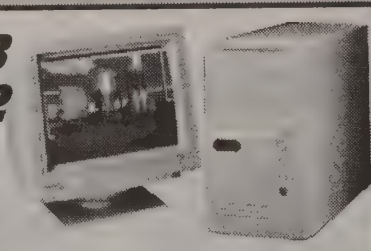


Features:
486DX/DX-2 Ready (Add any Speed CPU Up To 66Mhz), 4mb RAM, 130mb HDD,Built-in Trackball, 9.5" 256 Color Dual Scan STN Color LCD Display, 32-Bit VLB SVGA Accelerator Card, Internal 1.44 FDD, Complete w/ Carrying Case & Charger.

ESSENCE 486 VLB SX/DX/DX2

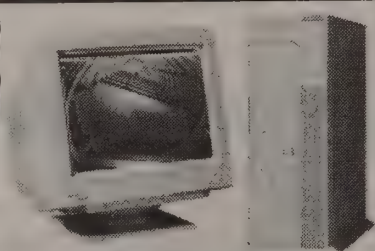
486DX2-50	$969
486DX-40	$939
486DX-33	$909
486SX-33	$839
486SX-25	$819



- Opti 486 Motherboard w/ 128K Cache & CPU
- **4Mb RAM, 250Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- Trident T9200 VLB SVGA 1Mb Graphics Accelerator
- 101 Key Enhanced Keyboard
- Mini-Vertical Case w/230Watt Power Supply
- **Monitor Optional.....**

ESSENCE 486 VLB DX/DX2

486DX2-66	$1169
486DX-50	$1249
486DX2-50	$1069
486DX-40	$1039
486DX-33	$1009



- Opti 486 Motherboard w/ 256K Cache, ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- Trident 9200 VLB SVGA 1Mb Graphics Accelerator
- 101 Key Enhanced Keyboard
- Mid-Vertical Case w/200Watt Power Supply
- **Monitor Optional.....**

MiTAC 486/25 Subnotebook

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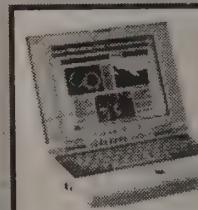
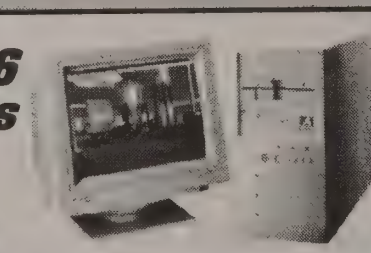


Features:
Intel SL Enhanced 486SX-25Mhz CPU, 4mb RAM, 130mb HDD,Built-in "Palm Rest" Trackball, 9.5" 64 Gray Scale Dual Scan LCD Display, Removable Drive System, **2 PCMCIA Slots.**

Acer AOpen 486 VLB Bus

486DX2-66	$1159
486DX2-50	$1059
486DX-40	$1029
486DX-33	$999
486SX-33	$929



- AOpen 486 Motherboard w/ 256K Cache, ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
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- Acer 101 Key Keyboard
- Acer AOpen Mini-Vertical Case w/230Watt Power Supply
- **Monitor Optional.....**

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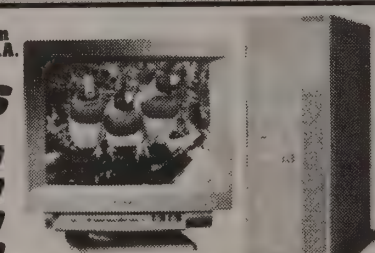
486DX2-50	$1189
486DX-40	$1159
486DX-33	$1129



- Vega 486VLB M/B w/256K Cache/ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- **Orchid Kelvin 64 VLB 1Mb Graphics Accelerator**
- 101 Key Enhanced Keyboard
- Mid-Vertical Case w/200Watt Power Supply
- **Monitor Optional.....**

MiTAC 486/33 Color

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Features:
Intel 486SX 33Mhz CPU, 4mb RAM, 120mb HDD, 5.9lbs, Digital Controls, Passive Matrix Color, Windows Accelerator, Built-In Trackball, Optional Mini-Docking Station

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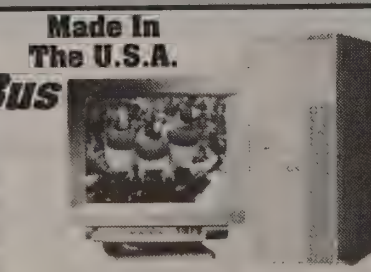
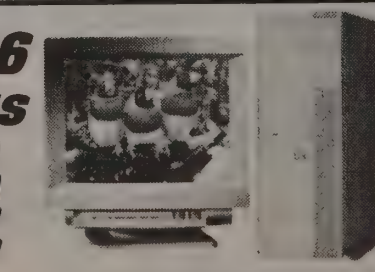
486DX2-50	$1169
486DX-40	$1139
486DX-33	$1109
486SX-33	$1039



- AVAX 486VLB M/B w/256K Cache/ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- **Orchid Kelvin 64 VLB** SVGA 1Mb Graphics Accelerator
- 101 Key Enhanced Keyboard
- Mid-Vertical Case w/200Watt Power Supply
- **Monitor Optional.....**

Acer AOpen 486 PCI Bus

486DX2-66	$1329
486DX2-50	$1229
486DX-40	$1199
486DX-33	$1169



- Acer 486PCI M/B w/256K Cache/ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- PCI IDE/FDD Controller
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- **Monitor Optional.....**

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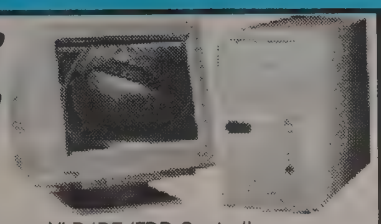
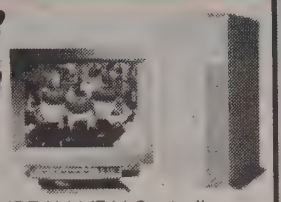


486DX2-66 ... $1869
486DX2-50 ... $1739
486DX-33 ..... $1659
486SX-33 ..... $1599
486SX-25 ..... $1569

- Opti 486 Motherboard w/ 256K Cache, ZIF & CPU
- **4Mb RAM, 250Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- Trident 9200 VLB SVGA 1Mb Graphics Accelerator
- VLB IDE/FDD Controller
- **15" Flat Screen SVGA Monitor, Digital, Low Radiation, 72Hz NI**
- 16bit Sound Blaster Compatible Stereo Sound Card
- (2X) Double Speed CD-Rom
- CS-150 Stereo Speakers
- 101 Key Enhanced Keyboard
- Mini-Vertical Case with 230Watt Power Supply

AVAX 486 VLB Multi-Media



486DX2-66 .... $2469
486DX2-50 .... $2339
486DX-40 ..... $2309
486DX-33 ..... $2259

- AVAX 486 Motherboard w/ 256K Cache, ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- **Orchid Kelvin 64 VLB 1Mb Graphics Accelerator**
- VLB IDE Hdd/Fdd Controller
- **15" Flat Screen SVGA Monitor, Digital, Low Radiation, 72Hz NI**
- TRUE Sound Blaster 16 Stereo Sound Card
- (2X) Double Speed CD-Rom
- CS-800 Speakers
- 101 Key Enhanced Keyboard
- Mid-Vertical Case with 200Watt Power Supply

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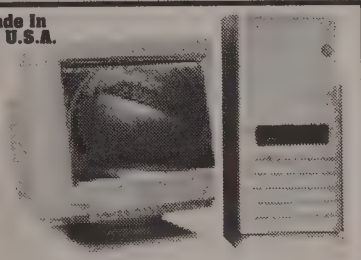
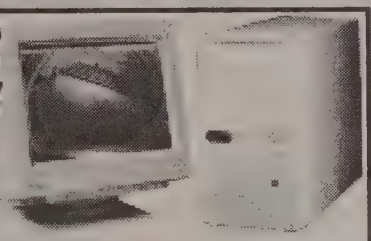


486DX2-66 ... $1559
486DX2-50 ... $1409
486DX-33 ..... $1399
***486SX-33 ... $1189**

- MX-30 486VLB M/B w/ 256K Cache, ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- Hercules Dynamite VLB 2Mb Graphics Accelerator
- 101 Key Enhanced Keyboard
- CS-230 Mid-Vertical Case w/230Watt Power Supply
- **Monitor Optional...**

* 486SX-33 Systems Have ***No*** Cache Memory

486 VLB Green PC



486DX4-100 . $2095
486DX4-75 ... $2015
486DX2-66 ... $1689
486DX2-50 ... $1579
486DX-33 ..... $1524

- **GREEN** 486 MB w/256K Cache, ZIF & CPU
- **4Mb RAM, 420Mb HDD**
- TEAC 1.2Mb & 1.44Mb
- 2 Ser./1 Par./1 Game
- VLB IDE/FDD Controller
- **GREEN** SVGA 1Mb Graphics Accelerator Card
- **15" SVGA NI Digital Flat Screen GREEN Monitor**
- 101 Key Enhanced Keyboard
- **GREEN** Mini-Vertical Case w/ 230Watt Power Supply

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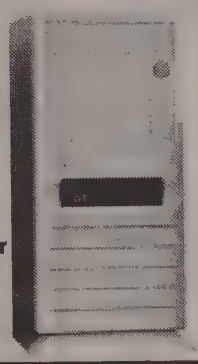

Pentium-66Mhz . $ CALL
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- Intel Pentium PCI Mbd & Intel Pentium 60 or 66Mhz CPU w/256K Cache
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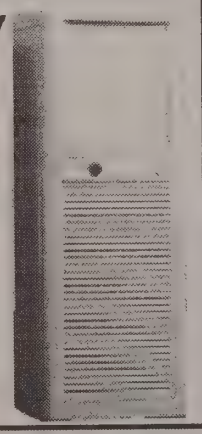
- **Orchid Kelvin 64 PCI Graphics Accelerator w/ 2Mb 64-Bit Addressed Memory**
- CS-230 Mid-Vertical Case w/250W. P.S. & Two Super Cooling Fans
- 101 Key Enhanced Keyboard

Pentium VLB/PCI



Pentium-90Mhz . $ CALL
Pentium-66Mhz . $ 3299
Pentium-60Mhz ... $3199

- Opti Pentium VLB/PCI Mbd & Intel Pentium CPU w/512K Cache
- **8Mb RAM, 1.0Gb HDD w/ Q-Logic *FAST*-SCSI PCI SCSI-2 Controller**
- TEAC 1.2Mb & 1.44Mb Floppy Drives
- **Diamond Viper PCI Graphics Accelerator**
- CS-300GTS Full-Vertical Case w/300W. P.S. & Two Super Cooling Fans
- 101 Key Enhanced Keyboard

ATI Mach 64 SVGA Accelerator

$395

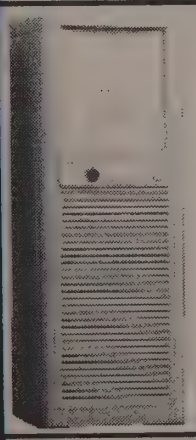
Features: 2Mb Dram, True 24-Bit Color, Ultra Fast Mach 64 Accelerator Chip, Up to 1280 x 1024 with 65K Colors, 100Hz Max. Refresh, Absolutely Awesome.

14,400bps Internal Fax/Modem

$79

Internal 14400bd Fax & 14400bd Modem Features v.32bis, v.42bis, MNP Error Correction

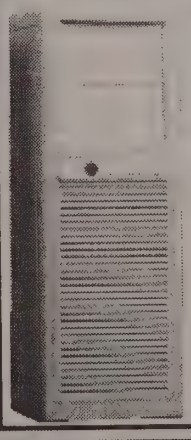
MICRONICS COMPUTERS INC.



Pentium 60 PCI $3099

- Micronics Pentium PCI Mbd & Intel Pentium 60Mhz CPU w/256K Cache
- **8Mb RAM, 540Mb FAST SCSI-2 HDD w/ QLogic *FAST*-SCSI PCI SCSI-2 Controller**
- TEAC 1.2Mb & 1.44Mb Floppy Drives
- **ATi Mach 64 Graphics Pro Turbo Mach 64 PCI 2Mb Graphics Accellerator**
- CS-300 Full-Vertical Case w/300W. P.S. & Two Super Cooling Fans
- 101 Key Enhanced Keyboard

Pentium 60 PCI



American Megatrends **$3099**

- AMI Pentium PCI Mbd & Intel Pentium 60Mhz CPU w/256K Cache
- **8Mb RAM, 540Mb FAST SCSI-2 HDD w/ QLogic *FAST*-SCSI PCI SCSI-2 Controller**
- TEAC 1.2Mb & 1.44Mb Floppy Drives
- **ATi Mach 64 Graphics Pro Turbo Mach 64 PCI 2Mb Graphics Accellerator**
- CS-300 Full-Vertical Case w/300W. P.S. & Two Super Cooling Fans
- 101 Key Enhanced Keyboard

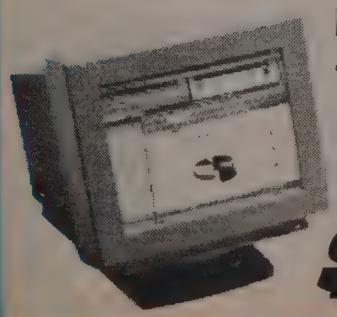
Hard Drive Blowout

420Mb IDE .. $289
540Mb IDE . $389

Both Drives Have Onboard Cache & Fast 13ms Access Times

While Supplies Last

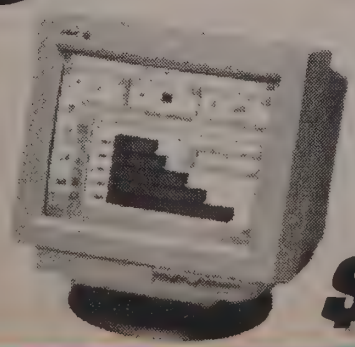
MITAC Hi-Resolution Monitors



M1450PD 14" SVGA NI

1024x768 Max. Resolution, Non-Interlaced, Digital On-Screen Programming, Power Saving **Green** Monitor

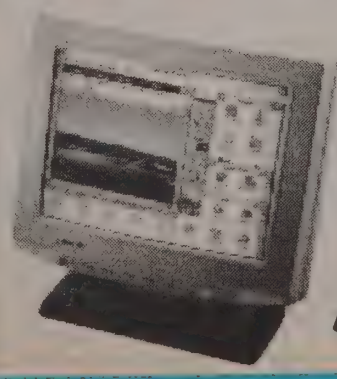
$248



L1564PD 15" SVGA NI

1280x1024 Max. Resolution, 76Hz Non-Interlaced, Digital On-Screen Programming, Power Saving**Green**Monitor w/ MPR-II Low Radiation

$375



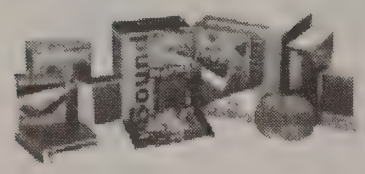
L1782 17" SVGA NI

1600x1280 Max. Resolution, 76Hz Non-Interlaced, Digital On-Screen Programming, Power Saving**Green**Monitor w/ MPR-II Low Radiation

$698

SuperStore Pricing ! No Pressure Tactics ! We Cater To Corporate Accounts ! PO's Accepted ! Growing Strong After 5 Years in Business ! Dealers Welcome ! Best Possible Price !

Multi-Media Systems



Harmony IIIB Multimedia Power Kit **$355**
- Mitsumi FX-001D Int. Double Speed CD-ROM 250ms
- Sound Blaster 16MCD Stereo Sound Card w/Speakers
- 6 CD titles - MPC Encyclopedia, US Atlas, World Atlas, Mavis Beacon's Typing, & Chessmaster 3000, Return to Zork

Harmony IIIA Multimedia Kit **$385**
- Panasonic CR-562B Internal Double-spin, Multi-session CD-ROM - 320ms, 300kb/s Data transfer rate
- Sound Blaster 16 Stereo Sound Card, w/Speakers
- 7 CD titles - MPC Encyclopedia, US Atlas, World Atlas, King's Quest V, Mixed Up Mother Goose, Tempra Photo CD, & Sherlock Holmes Consulting Detective

Harmony IVA Multimedia Power Kit **$615**
- NEC 3XI Internal 3X Speed CD-ROM (195ms,450K)
- Sound Blaster 16 SCSI-2 16Bit Stereo Sound Card
- 7 CD titles - MPC Encyclopedia, US Atlas, World Atlas, Return To Zork, Loom, Kodak Photo CD, Reference Library

Discovery CD 16 Upgrade Kit (Internal) **$329**
- **Sound Blaster 16** Stereo Sound Card
- Creative Labs Internal CD-ROM (Panasonics CD-ROM), 64KB Buffer, 300KB/sec Data Transfer, 320ms Access rate, Photo CD compatible
- A pairs of Stereo Speakers
- Software bundled: Multimedia Encyclopedia, The .. Animals!, Aldus PhotoStyler SE, Just Grandma & Me, Where in the World is Carmen Sandiego - Deluxe

Sony / Sound Blaster 16 Bundle **$259**
- **SONY CDU-33A 2X** Internal CD-ROM (300k,280ms)
- **Sound Blaster 16** Stereo Sound Card

Sony / Spectrum Bundle **$269**
- **Sony 33A 2X** Internal SCSI CD-ROM (300Kb/s, 320ms)
- **Media Vision Pro Audio Spectrum 16** Stereo Sound Card

Panasonic CR-563/SoundBlaster 16 Bundle **$255**
- **Panasonic CR-563 2X** Int. CD-ROM (320ms,300k)
- **Sound Blaster 16** Stereo Sound Card

NEC CDR-210 / Spectrum 16 Bundle **$279**
- **NEC CDR-210 2X** SCSI (300Kb/s, 280ms)
- **Pro-Audio Spectrum 16** Stereo Sound Card

NEC CDR-510 / Spectrum 16 Bundle **$489**
- **NEC CDR-510 3X** SCSI (300Kb/s, 280ms)
- **Pro-Audio Spectrum 16** Stereo Sound Card

Toshiba / Spectrum Bundle **$319**
- **Toshiba 4101 Int. 2X** SCSI CD-ROM (300Kb/s, 320ms)
- **Pro-Audio Spectrum 16** Stereo Sound Card

Toshiba / Spectrum Bundle **$429**
- **Toshiba 3401B Int. 2X** SCSI CD-ROM (300Kb/s, 200ms)
- **Pro-Audio Spectrum 16** Stereo Sound Card

Sound Cards

CREATIVE
CREATIVE LABS, INC.

Creative Lab Sound Blaster Deluxe	$68
Creative Lab Sound Blaster Pro Deluxe	$89
Creative Lab Sound Blaster 16 Basic	$118
Creative Lab Sound Blaster 16 MCD	$168
Creative Lab Sound Blaster 16 MCD ASP	$188
Creative Lab Sound Blaster 16 SCSI II	$188
Creative Lab Sound Blaster 16 SCSI II ASP	$208
Creative Lab ASP Upgrade	$65
Creative Lab Voice Assist w/Mic	$65
Creative Lab MIDI Kit	$75
Creative Lab Video Spigot for Windows	$279
Creative Lab Video Blaster SE	$269
Creative Lab WaveBlaster Daughter Board	$199

***** Please call for prices on ATI, Aztech Labs, Cardinal, Diamond, Logitech, Roland, Sigma Designs, & Turtle Beach Sound Products***

CD-ROMs

Mitsumi

Mitsumi FX001D Int. CD-ROM (Double Speed,250ms)	$142
Mitsumi FX001D Int. CD-ROM with Interface	$149

NEC

NEC CDR-210 Int. OEM SCSI CD-ROM (320ms,300k,)	$168
NEC CDR-510 Int. 3X Speed CD-ROM (195ms,450K)	$375
NEC CDR-400 3Xp Portable 3X Speed CD-ROM	$480
NEC CDR-500 3Xi Internal 3X Speed CD-ROM	$515
NEC CDR-6003Xe External 3X Speed CD-ROM	$605
NEC CDR-900 4Xe External 4X Speed CD-ROM	$985

Panasonic
Office Automation

Panasonic CR-562 Int. 2X CD-ROM (320ms,300kb/s)	$149
Panasonic CR-5632Int. 2X CD-ROM w/ Interface	$165

SONY

SONY CDU-33A Internal 2X CD-ROM (300k,280ms)	$154
SONY CDU-33A Internal 2X CD-ROM w/Interface	$170

TOSHIBA

Toshiba 4101B Int. SCSI CD-ROM 320k, 275ms	$199
Toshiba 3401B Int. SCSI CD-ROM 320k, 200ms	$309
Toshiba 3401E Ext. SCSI CD-ROM 320K, 200ms	$495
Toshiba 3401P Portable SCSI CD-ROM	$580

Tape Backups

Conner

Conner TapeStor 250MB Tape Backup w/One Pre-formatted Cartridge	$165
Conner TapeStor 250MB **External Parallel Port** Tape Backup w/One Pre-formatted Cartridge	$325

Colorado

Colorado JT-10 120MB **Parallel Port** External	$220
Colorado JT-20 250MB **Parallel Port** External	$345
Colorado DJ-10 120MB Internal Tape Backup	$109
Colorado DJ-20 250MB Internal Tape Backup	$179
Colorado Int. Power Tape 1.0GB Tape Backup	$650
Colorado Int. Power Tape 2.0GB Tape Backup	$955
Colorado Int. Power Tape 4.0GB Tape Backup	$1195
Colorado Ext. Power Tape 2.0GB Tape Backup	$1095
Colorado Ext. Power Tape 4.0GB Tape Backup	$1425
Colorado PowerDAT 6000 Internal 2.0GB TB	$1120
Colorado PowerDAT 6000 External 2.0GB TB	$1350

***** Call for prices on DEC, Emerald Systems, Exabyte, Helett-Packard, IOMega, Mountain, Summit, Tecmar, Wangtek & WangDAT Tape Backup Systems***

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Canon

Canon BJ-10sx Bubble Jet Printer	$249
Canon BJ-200e Bubble Jet Printer	$318
Canon BJC-600 Color Bubble Jet Printer	$595
Canon BJC-800 Color Bubble Jet Printer	$1533
Canon BJC-820 Color Bubble Jet Printer (Wide)	$1647
Canon LBP-4 Plus 4PPM Laser Printer	$595

Citizen

Citizen Notebook II Ink Jet Printer (Professional,Optional Color)	$318
Citizen GSX-190 Printer (9pin/color option)	$159
Citizen GSX-220 Quiet Printer (24pin/color option)	$185
Citizen GSX-230 Quiet Printer (24pin/270cps/color option)	$226
Citizen GSX-240 Quiet Printer (24pin/300cps/80col/color opt.)	$290
Citizen GSX-145 Printer (24pin/192cps/132col/color option)	$355
**** Color Kit for Citizen GSX190, GSX-230 or GSX-240*	*+43*

Panasonic

Panasonic KX-P1150 Printer (9pin/240cps/80col)	$139
Panasonic KX-P2023 Quiet (24pin/240cps/80col)	$199
Panasonic KX-P2123 Quiet (24pin/240cps/80col/color opt.)	$235
**Color Kit for Panasonic KX-P2180, KX-P2123 or KX-P2124*	*+45*
Panasonic KX-P3123 Quiet (24pin/240cps/80col/color opt.)	$315
Panasonic KX-P3124 Quiet (24pin/320cps/80col/color opt.)	$369
Panasonic KX-P3624 Quiet (24pin/300cps/132col)	$428
Panasonic KX-P4400 LED Page Printer (4ppm/1Mb/300dpi)	$549
Panasonic KX-P5400 LED Post Script Printer	$849
Panasonic KX-P4410 Laser (5ppm/512K/300dpi)	$549
Panasonic KX-P4430 Laser w/SaintPrint (5ppm/1MB/300dpi)	$659
Panasonic KX-P4440 Laser w/SaintPrint (10pm/1MB/300dpi)	$1189

Hewlett Packard

Hewlett Packard Portable Printer	$349
Hewlett Packard DeskJet 500 InkJet Printer	$299
Hewlett Packard DeskJet 560C Color InkJet Printer	$589
Hewlett Packard LaserJet 4L Personal Laser	$675
Hewlett Packard LaserJet 4P Laser	$945
Hewlett Packard LaserJet 4 Plus Laser	$1455
Hewlett Packard LaserJet 4M Plus Laser	$1925

System Boards

Intel (PCI Bus)

SYSTEM BOARDS (w/o CPU, 0K Memory) - INTEL

Intel Pentium **PCI** 66Mhz M/B w/256K	$425
Intel Pentium **PCI** 60Mhz M/B w/256K	$385

AMI (PCI,VLB,EISA)

SYSTEM BOARDS (w/CPU, 0K Memory) - AMI

AMI Pentium **PCI** 60Mhz w/256K	$1350
AMI Pentium **VLB** 60Mhz M/B w/256K	$1325
AMI 486DX2-66 **PCI** M/B w/256K	$835
AMI 486DX-33 **PCI** M/B w/256K	$700
AMI Enterprise IV 486DX2-66MHz **EVLB** M/B w/256K	$885
AMI Enterprise IV 486DX-50MHz **EVLB** M/B w/256K	$900
AMI Enterprise IV 486DX-33MHz **EVLB** M/B w/256K	$750
AMI Super Voyager II 486DX2-66MHz **VLB** M/B w/256K	$760
AMI Super Voyager II 486DX-50MHz **VLB** M/B w/256K	$775
AMI Super Voyager II 486DX-33MHz **VLB** M/B w/256K	$625
AMI Super Voyager II 486SX-33MHz **VLB** M/B w/64K	$450
AMI Super Voyager II 486SX-25MHz **VLB** M/B w/64K	$375

Micronics (PCI,VLB,EISA)

SYSTEM BOARDS (w/CPU, 0K Memory) - MICRONICS

Micronics Pentium **EISA PCI** 66Mhz M/B w/256K	$1625
Micronics Pentium **EISA PCI** 60Mhz M/B w/256K	$1450
Micronics Pentium **PCI** 66Mhz M/B w/256K	$1450
Micronics Pentium **PCI** 60Mhz M/B w/256K	$1345
Micronics M4P 486DX2-66 PCI M/B w/256K	$805
Micronics M4P 486DX2-50 PCI M/B w/256K	$675
Micronics M4P 486DX-33 PCI M/B w/256K	$665
Micronics M4P 486SX-33 PCI M/B w/256K	$460
Micronics E3V 486DX2-66MHz EISA VLB M/B w/256K	$920
Micronics E3V 486DX2-50MHz EISA VLB M/B w/256K	$795
Micronics E3V 486DX-33MHz EISA VLB M/B w/256K	$785
Micronics MX-30 486DX2-66MHz **VLB** M/B w/256K	$700
Micronics MX-30 486DX2-50MHz **VLB** M/B w/256K	$570
Micronics MX-30 486DX-33MHz **VLB** M/B w/256K	$560
Micronics MX-30 486SX-33MHz **VLB** M/B w/128K	$368
Micronics MX-30 486SX-33MHz **VLB** M/B w/0K	$346
Micronics MX-30 486SX-25MHz **VLB** M/B w/0K	$275
Micronics Mini 486DX2-66MHz **ISA** M/B w/256K	$695
Micronics Mini 486DX-50MHz **ISA** M/B w/256K	$700
Micronics Mini 486DX2-50MHz **ISA** M/B w/256K	$565
Micronics Mini 486DX-33MHz **ISA** M/B w/256K	$555
Micronics Mini 486DX-33MHz **ISA** M/B w/128K	$530
Micronics Mini 486SX-33MHz **ISA** M/B w/128K	$355
Micronics Mini 486SX-33MHz **ISA** M/B w/0K	$305

IBM (VLB)

SYSTEM BOARDS (w/CPU, 0K Memory) - IBM

IBM Path-411 486SLC2-66 **VLB** M/B w/128K & Math-Co	$280

Acer (PCI,VLB)

SYSTEM BOARDS (w/o CPU, 0K Memory) - Acer

Acer Pi1 486 **PCI** M/B w/256K Cache (Green, 72pin) - ZIF, IDE & IO	$220
Acer Vi11 486 **VLB** M/B w/256K Cache - ZIF	$118

ASUS (PCI,VLB,EISA)

SYSTEM BOARDS (w/o CPU, 0K Memory) - ASUS

Asus Pentium 90/100MHz Dual-Processor M/B w/256K Cache	$1350
Asus E-P5MP4 Pentium 60/66MHz **EISA PCI** M/B w/256K Cache	$575
Asus I-P5MP3 Pentium 60/66MHz **PCI** M/B w/256K Cache	$415
Asus I-486SP3 486 **PCI** M/B w/256K Cache w/SCSI & IO	$385
Asus I-486SV2GX4 486 **VLB** M/B w/256K Cache (Green,72pin)	$155

AVAX New! (VLB)

SYSTEM BOARDS (w/o CPU, 0K Memory) - AVAX, made in USA

AVAX 486 **VLB** M/B w/256K Cache (Green, 72pin) w/ZIF	$150

OPTI

SYSTEM BOARDS (w/o CPU, 0K Memory) - OPTI

OPTi Pentium 90MHz **PCI VLB** M/B w/256K Cache	$575
OPTi Pentium 60/66MHz **PCI VLB** M/B w/512K Cache	$395
OPTi 486 **EISA VLB** M/B w/256K Cache (72 pin)	$225
OPTi 486G **VLB** M/B w/256K Cache (Green, 72pin) w/ZIF	$128
OPTi 486G **VLB** M/B w/256K Cache (Green, 72pin)	$119
OPTi 486 **VLB** M/B w/256K Cache (Bus Master mode) w/ZIF	$112
OPTi 486 **VLB** M/B w/128K Cache (Slave mode)	$96
OPTi 386**DX-40** M/B w/128K Cache w/CPU	$123

VEGA

SYSTEM BOARDS (w/o CPU, 0K Memory) - VEGA, made in USA

VEGA 486 PCI VLB M/B w/256K Cache (3VLB)	$285
VEGA 486 EISA VLB M/B w/256K	$305
VEGA 486S VLB M/B w/256K (3VLB)	$175
VEGA 486V VLB M/B w/256K Cache (VIA) - 72 pin	$175
VEGA 486G VLB M/B w/256K Cache - 72 pin, Green	$180

CPU's & RAM

MICROPROCESSORS (CPU)

Intel **PENTIUM 90MHz** CPU	$980
Intel **PENTIUM 66MHz** CPU	$805
Intel **PENTIUM 60MHz** CPU	$725
Intel 486DX4-100MHz CPU	$770
Intel 486DX4-75MHz CPU	$690
Intel 486DX2-66MHz CPU	$395
Intel 486DX-50MHz CPU	$405
Intel 486DX2-50MHz CPU	$290
Intel 486DX-33MHz CPU	$272
Intel 486SX-33MHz CPU (PGA)	$125
Intel 486SX-25MHz CPU (PGA)	$105
AMD 486DX2-66MHz CPU	$326
AMD 486DX2-50MHz CPU	$258
AMD 486DX-40MHz CPU	$240
Cyrix 486DX-50MHz CPU	$330
Cyrix 486DX2-50MHz CPU	$230
Cyrix 486DX-40MHz CPU	$203
Cyrix 486DX-33MHz CPU	$180

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11D 14" SVGA (1024x768,.39dp) $209
33D 14" SVGA (1024x768,.28dp) $255
34T 14" SVGA NI (1024x768,.28dp) **$265**
56L 15" SVGA NI FST (1024x768,.28dp) **$369**
76i 17" SVGA NI FST(1280x1024,.28dp) **$675**

Infiniti

IT1400VG 14" Mono VGA (Paper White) **$99**
IE1439SV 14" SVGA (1024x768,.39dp) **$192**
IE1428SV 14" SVGA (1024x768,.28dp) **$214**
IE1428N4 14" Full SVGA NI (1024x768,.28dp) **$245**
IE1528DN6 15" Digital FST (1280x1024,.28dp) **$385**
IE1728DN7 17" FST SVGA NI (1280x1024,.28) **$625**

Digiview

HR-1401 14" SVGA (1024x768,.39dp) **$189**
HR-1428 14" SVGA (1024x768,.28dp) **$213**
HR-1431 14" SVGA NI (1024x768,.28dp) **$239**

MAG

LX-1450 14" SVGA NI (1024x768,.28dp) **$289**
LX-1564 15" SVGA NI (1280x1024,.28dp) **$369**
MX-15F 15" Digital NI (1280x1024,.28dp) **$449**
MX-17F 17" Digital NI (1280x1024,.28dp) **$849**
DX-15F 15" Green FST (1280x1024,.28dp) ... **$429**
DX-17F 17" Green FST (1280x1024,.28dp) ... **$699**

NEC

3V 15" Multi-Freq **Green EPA** (.28dp) **$495**
3FGe 15" Color Monitor (1024x768,.28dp) **$595**
4FGe 15" Multi-Freq (1024x768,.28dp) **$655**
5FGe 17" Multi-Freq (1024x768,.28dp) **$1045**
MultiSync 5FGP 17" (1280x1024,.28dp) **$1175**
MultiSync 6FGP 21" (1280x1024,.28dp) **$2125**

OPTIQUEST

900S 14" SuperVGA (1024x768,.28dp) **$249**
1000S 14" SVGA NI (1024x768,.28dp) **$265**
1500D 14" Digital NI (1024x768,.28dp) **$339**
2000DS 15" Digital NI (1280x1024,.28dp) **$375**
2000DC 15" Digital NI (1280x1024,.28dp) **$415**
4000DS 17" Digital NI (1280x1024,.28dp) **$685**
4000DC 17" Digital NI (1280x1024,.28dp) **$765**

ViewSonic®

4E 14" SuperVGA (1024x768,.28dp) **$269**
6E 14" SuperVGA NI (1024x768,.28dp) **$285**
14E 14" SuperVGA NI (1024x768,70Hz,.28dp) **$325**
15E 15" Flat Screen (.28dp,76Hz refresh) **$375**
15EX 15" Digital Multi-Freq (.28dp,1280x1024) **$399**
15 15" Digital Multi-Freq (.28dp,1280x1024) **$449**
17G 17" Digital Multi-Freq (.28dp,1280x1024) .. **$789**
17 17" Digital Multi-Freq (.28dp,1600x1280) **$929**
20 20" Digital Multi-Freq (.28dp,1600x1280) ... **$1479**
21 21" Digital Multi-Freq (.28dp,1600x1280) ... **$1699**

MiTAC

A1437 14" SVGA (.39dp,1024x768) **$205**
A1438 14" SVGA (.28dp,1024x768) **$225**
M1450PD 14" NI, Digital (.28dp,1024x768) **$248**
A1548T 15" NI FST (.28dp,1024x768) **$318**
A1775 17" NI FST (.28dp,1280x1024) **$665**
L1564PD 15" NI Digital FST (.28dp,1280x1024) ... **$375**
L1782 17" NI Digital FST (.26dp,1600x1200) **$698**
L2182 21" NI Digital FST (.25dp,1600x1200) **$1695**

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Mono/Graphics/Printer Card **$14**
AVGA-1 VGA Card w/256K **$30**
AVGA-3 (CL GD5422) 1MB Accelerator (16.7mil color) **$65**
Cirrus Logic GD5428 VLB Accelerator w/1MB **$85**
TVGA-9000 VGA w/256K (up to 512K) **$32**
TVGA-8900D 1MB SuperVGA Card **$64**
TVGA-9200 VESA VLB 1Mb Accelerator Card **$70**
TVGA-9400 VESA VLB 1Mb Accelerator Card **$76**
WD-90C33 **VLB Accelerator** w/1MB **$85**
Paradise VLB Plus **Accelerator** w/1MB **$130**
Tseng Lab W32i **VLB** 1Mb Accelerator Card **$128**
Tseng Lab W32p **PCI** 2Mb Accelerator Card **$186**

ATi

Graphics Wonder ISA w/1Mb **$160**
Graphics Wonder VLB w/1Mb **$160**
Graphics Ultra Plus ISA w/1Mb **$165**
Graphics Ultra Plus VLB w/1Mb **$165**
Graphics Ultra Pro ISA w/2Mb **$289**
Graphics Ultra Pro VLB w/2Mb **$289**
Graphics Ultra Plus PCI w/1Mb **$175**
Graphics Ultra Pro PCI w/1Mb **$298**
Graphics mach64 Turbo w/2Mb ISA/VLB/PCI .. **$395**

DIAMOND

SpeedStar Pro Graphics Accelerator w/1MB **$110**
SpeedStar Pro VLB Accelerator w/1MB **$110**
Stealth-24 ISA Windows Accelerator w/1MB **$168**
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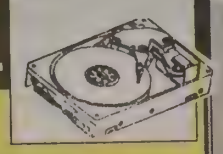

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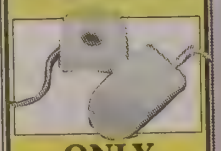

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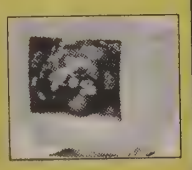

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Continued from page 164

on the real McCoy. Hardware emulation—which has been done—is the only way to get acceptable performance, but that route is expensive and PCs are just too cheap.

However, although a Windows PC may be very affordable, you still have to wrestle with multiple hardware standards, incompatibilities from manufacturer to manufacturer, and the list goes on—it's ridiculous!

I encourage you to "look" at the other platforms, but it will only make you pray harder that the Amiga survives.

The next version of Windows (code-named Chicago) is due out late this year and has a list of features that reads like an AmigaDOS manual (e.g., preemptive multitasking and a GUI that is tied to the file directory structure). Plug-and-play expansion is also coming. So Windows might eventually turn into a decent OS, but I'm not holding my breath.

If efforts to revive the Amiga fail, it still has enough life to wait and see how the Windows-Mac war progresses. If I'm forced to convert, I'm going with the favorite (cursing at every turn, of course).

SUMMARY

Eventually—and maybe even by the time you read this—all will be known and I may look like a prophet or a fool. However, as of now, the Amiga is not dead and there is room for hope.

The demise of Commodore may eventually turn out to be a good thing. It was time for Commodore to be put to pasture or hand the reins over to someone else. What if a company that knows how to market a product gains control of the Amiga technology? That would be very exciting indeed, so stay tuned. The final chapter of the Amiga may not have been written yet. In fact, this just may be the first chapter of the sequel! ■

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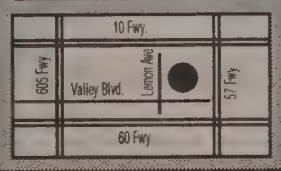

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Upgrading A 386...

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changes, the system loaded in considerably less than a minute. But more importantly, applications worked much faster. No longer was I cursing Windows.

Video

But my upgrading was not done. I needed to examine two more areas. First was the video card. I had been using an ATI Ultra card for a couple of years and wanted to know how to improve the performance. Before changing motherboards, I installed a Graphics Ultra+. This board is terrific. It gives excellent performance and also comes with a mouse. I like this arrangement as it saves an expansion slot.

Although I was pleased with its performance, I wanted to see what a really fast VLB graphics board would do, now that I had VLB capability.

The benchmarks consistently indicate that the fastest video board is the Diamond Viper board. Unfortunately, this board will work only with real Intel 486 processors. It would not work in my system, with the Cyrix CPU. Diamond does, however, make several other fast VLB boards, so I tried their Stealth Pro. It is fast and flexible, but I actually found that, for normal business uses like word processing and spreadsheets, a fast video board does not offer greatly enhanced performance.

In the end, I went back to my ATI board because of the built-in mouse port. I don't do lots of video-intensive work, and couldn't justify the additional expense of a super fast video board. If you're running CAD or other programs that make high demands on your video system, you may want to consider one of the Diamond boards. They are excellent and the company provides wonderful technical support if you have any kind of problem.

Controller Cards

My final experiment was to run a faster controller card from Promise Technology. There was some improvement in performance, but, again, not dramatic enough to justify spending the extra $100. I suspect that I would find much more dramatic improvement if I were to replace my hard drive with a super fast model.

The two most important elements in increasing performance are added system memory and onboard cache.

Upgrade Or Replace?

When you begin to upgrade an older computer, it's easy to get carried away. After all, virtually every part of the computer can be replaced by newer and faster components. But if you want to do this, you're better off buying a new computer—it will be cheaper in the long run. My purpose is simply to indicate ways in which you can get a few more good years out of an older machine that still works well and has a lot of life left.

In the end, I concluded that the two most important elements in increasing performance are added system memory and onboard cache. These changes will make a dramatic improvement in performance. The rest of the changes are real, but not as dramatic, and perhaps too costly to justify an upgrade, unless you have specific applications that can take advantage of the improved performance. ■

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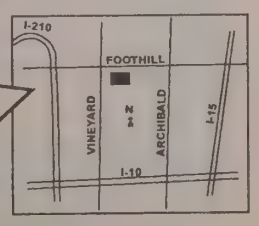

Continued from page 110

and loaded with interesting real-life examples. Chapters cover the etiquette of email and of discussion groups as well as providing excellent netiquette guidelines for business, home, and school use. Particularly useful sections cover "electronic style" and the "core rules" of the online world. One chapter covers copyright issues and another the etiquette of email privacy. There's even a tiny chapter on "Love & Sex in Cyberspace."

This book is filled with good advice for living your life online and off. Useful tidbits include: "Don't cheat on your spouse (and if you do, don't do it on company time)," "Don't carbon-copy Steve Jobs on your analysis of the war in Bosnia," and the vague but truest rule of all, "Don't do stupid things." All very good advice. This book should be required reading for anyone thinking of signing on to the Internet, America Online, or any other networked community.

For more information about *Netiquette*, you can send electronic mail to info@albion.com .

Amiga Hardware Review

Video Toaster Flyer

Manufactured By: NewTek
List Price: $3995
Reviewed By: Douglas J. Nakakihara

The Video Toaster Flyer is a nonlinear video editing system for the Commodore Amiga. The Flyer offers D-2 quality video and CD quality audio editing in a tapeless environment, with a drag-and-drop storyboard interface. Data is stored using NewTek's proprietary NTASC codec, which offers lossless or lossy compression superior to MPEG and JPEG. Video sequences can be used in Lightwave, and Lightwave frames can be sent directly to the Flyer. Requires an Amiga 2000/3000/4000, two SCSI-2 hard drives (twenty-one maximum), CD-ROM, TBC, and any Video Toaster card. Connects via internal ribbon cable. (NewTek, Inc., 1200 SW Executive Dr., Topeka, KS 66615. 913/228-8000) ■

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Two trends in corporate buying have greatly increased standardized buying and have helped the largest software companies in both sales and support.

In the past year, two trends in corporate buying have greatly increased standardized buying and have helped the largest software companies in both sales and support. The first trend is towards communications-based software, most notably Lotus Notes. Notes and other centralized communications software allow a company's MIS department to create programs that pass data between people in an organized fashion and make processes more predictable. The second trend is towards unified software suites like Microsoft Office and Lotus SmartSuite, medium-cost sets of software that cover almost all of the common tasks needed by businesspeople.

Although individuals can use the suites, they are extremely popular in corporations because they reduce training and support costs and they make it more difficult for departments to choose nonstandard software if there is a reasonable replacement in the suite. Microsoft and Lotus have launched strong advertising campaigns aimed at software buyers extolling the features of their suites and promising better support for sites that buy many copies. In fact, many of the changes in technical support that have happened over the last year have been aimed at making large buyers happier, usually at the expense of individual users.

Microsoft's main sales tactics for Microsoft Office has been to make the interface of its programs almost identical and then show people who already use one program how much the others look like it. If you already use Word for Windows and know its toolbars and the general layout of its menus, for example, you will find Excel surprisingly similar. So, why don't you just buy the whole kit and ignore Microsoft's competitors? These arguments are more persuasive with companies who have software budgets in the tens and hundreds of thousands of dollars than with individuals.

While the corporateware moniker is appropriate for the software suites, it is even more appropriate for Lotus Notes. Notes is one of the first pieces of software to sell well despite the fact that it makes almost no sense (yet) for single users. The basic concept behind Notes is that there are repositories of corporate information and that new information should flow into and out of those repositories instead of between individual users. This metaphor makes it much easier to expand distribution lists on an ad hoc basis, to quickly share large chunks of information (such as reports, charts, and so on), and to know what is known about a particular subject.

Lotus Notes is a godsend for some corporate MIS departments, giving them a way to link unsophisticated users into large company databases using a simple interface. They've been buying copies of notes by the hundreds and thousands, quickly making it one of the most popular communications programs available. Setting up Notes isn't easy for an individual, but once you have the hang of it (which is, after all, the job of the MIS department), installing and configuring Notes goes quickly. Adding new users to existing Notes applications is almost trivial.

To corporations, this is the true meaning of corporateware: making incremental additions to the company as painless as possible. Things like network installation and single-diskette configuration are important, but for suites and communications programs to convince MIS departments, they must go well beyond these. Since training can sometimes cost almost as much as the software, reducing costs through standardization can be a huge cost-cutter. The successful suites have extended this by making each component in the suite look like the others, so that companies that don't spend enough on training make it easier on the poor user. Companies like Microsoft, Novell, and Lotus have finally figured out how to entice corporations to standardize on their software, and it will be interesting to see how this affects corporate users who have less choice but more support for the tools they have.

Dell Recalls Defective Monitors

Dell Computer announced a recall of about sixty thousand monitors that could cause a fire. Dell stressed that the recall applies only to the Model DL-1460NI 14" color monitors, and that they had not had problems with any other monitors. These monitors were sold through mail order by Dell and some large outlets like Price Club. Dell said that it would replace the monitors for free, including the shipping in both directions. Anyone with that model of monitor should immediately stop using it and contact Dell to get a shipping box for the monitor.■

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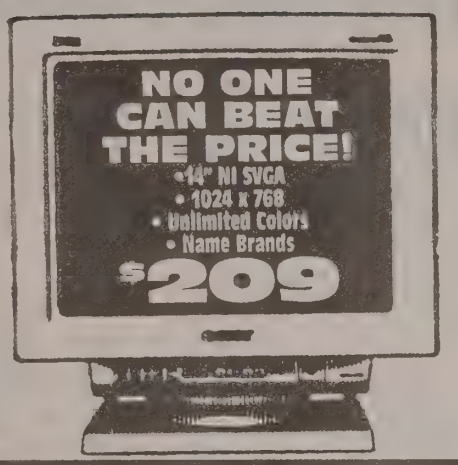

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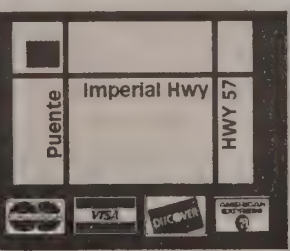

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TECHNOLOGY STOCKS RALLY AMID STRENGTHENING NATIONAL ECONOMY

The US

economy grew at a 3% clip during the first quarter of 1994, up from an estimate of 2.6% projected last month. As a result, stocks nationally turned in impressive performances in the month of May.

The MicroTimes Stock Index benefited from the good economic news, as our indicator of thirty-two technology stocks rallied 69.43 points, or 1.50%, en route to a close of 4709.29. The Dow Jones Industrial Average, in comparison, tacked on 85.64 points, or 2.33%, to conclude at 3757.14. Turning to stocks in the accompanying table:

Borland International Inc., which was the largest dollar and largest percentage loser during the period, said it plans to launch its long-awaited database product next month, although CEO Philippe Kahn acknowledged that the software still has "bugs" that could keep it off retail shelves for weeks.

Separately, Kahn denied recent reports that Borland might spin off another of its business units after selling its Quattro Pro spreadsheet division to Novell Inc. earlier this year. Kahn, trying to calm worries among potential customers who had asked about the company's stability, also lashed out at the news media for negative stories about Borland's potential. The company said that it expects to post lower revenue and an operating loss for its first quarter ending June 30. The software maker said that its revenue will be hurt by declining sales of its Quattro Pro spreadsheet and its Borland Office software suite.

Compaq Computer Corp., the Houston-based computer maker, sold the most computers worldwide in the first quarter, beating perennial leaders IBM and Apple, and gaining market share in the crucial US PC market. Compaq said that it expects to be the top PC supplier in the world by 1996.

The company's shares also gained amid optimism about second-quarter sales and in anticipation of the company's three-for-one stock split, traders said. Michele Preston, an analyst at Merrill Lynch & Co., says she expects second-quarter sales to exceed expectations and that earnings could be above her estimate of $2.11 per share.

As a result of the aforementioned events, investors were quick to add shares of Compaq to their portfolios last month, as the share price of the Houston based company rallied $7.25 a share, or 6.6%, before pausing at $116.50. Compaq was the largest dollar-gainer of the lot, and hit a new 52-week high of $119.63 during the period before profit-taking whittled away at the stock price. The company's shares have rocketed 60% in the last six months.

IBM rallied a brisk $6.50 a share, or 11.4%, to close at $63.63. The company recently reported stronger-than-expected first-quarter earnings. A week after reporting encouraging first-quarter earnings, Louis V. Gerstner Jr., chairman of IBM, said, "I think we've stopped the bleeding... We are not proclaiming victory, but I think it's safe to say the funeral dirge is over."

Separately, International Business Machines reported that it has cut about 20% to 23% of the thirty-five thousand jobs it said it would eliminate by the end of the year. Thus far, seven thousand to eight thousand jobs have been cut, leaving a substantial amount yet to be trimmed over the next eight months.

Dell Computer, the largest percentage gainer in this period, was raised to "hold" from "sell" at Salomon Brothers by analyst Lucianne Painter. Last month, Dell announced that net income rose to $19 million, or $0.42 cents a share in the first quarter, up from $10.2 million, or $0.25 a year ago. Dell attributed the improvement to lower expenses and higher sales of profitable Pentium-based machines.

In other news, Austin, Texas-based Dell is selling its investment portfolio of risky derivative securities, which sliced $2.3 million off Dell's fiscal first-quarter profits. ■

EXCH	COMPANY	TICKER SYMBOL	CLOSING PRICE 04/29/94	CLOSING PRICE 05/27/94	NET CHANGE IN PERIOD	PERCENT CHANGE IN PERIOD	P/E RATIO	ANNUAL DIVIDEND RATE	ANNUAL DIVIDEND YIELD	ANNUAL HIGH	ANNUAL LOW
	SOFTWARE										
OTC	Adobe	ADBE	25.50	27.50	2.00	7.84	23	0.20	0.73	37.00	16.25
OTC	Aldus	ALDC	28.38	27.63	-0.75	-2.64	34	0.00	0.00	34.50	13.50
OTC	Autodesk	ACAD	54.00	52.00	-2.00	-3.70	21	0.48	0.92	61.75	37.00
OTC	Borland (L)	BORL	12.00	9.75	-2.25	-18.75	18	0.00	0.00	26.00	8.50
OTC	Informix (L)	IFMX	16.75	15.50	-1.25	-7.46	18	0.00	0.00	27.25	14.25
OTC	Lotus	LOTS	63.38	61.38	-2.00	-3.16	44	0.00	0.00	86.50	30.25
OTC	Microsoft (s)	MSFT	46.06	52.38	6.31	13.70	29	0.00	0.00	54.25	35.19
OTC	Novell	NOVL	18.63	17.75	-0.88	-4.70	-	0.00	0.00	29.25	15.38
OTC	Oracle	ORCL	29.88	34.13	4.25	14.23	42	0.00	0.00	37.75	19.88
OTC	Software Publishing (L)	SPCO	5.25	5.00	-0.25	-4.76	-	0.00	0.00	8.63	3.75
OTC	Symantec	SYMC	15.88	13.75	-2.13	-13.39	-	0.00	0.00	20.50	10.88
	HARDWARE										
OTC	Apple	AAPL	30.25	29.94	-0.31	-1.03	-	0.48	1.60	58.25	22.00
OTC	AST Research	ASTA	18.75	17.63	-1.13	-6.00	-	0.00	0.00	33.00	13.75
NYS	Commodore	CBU	0.88	0.88	0.00	0.00	-	0.00	0.00	4.63	0.50
NYS	Compaq (H)	CPQ	109.25	116.50	7.25	6.64	18	0.00	0.00	119.63	43.13
NYS	Digital Equipment	DEC	21.50	22.88	1.38	6.40	-	0.00	0.00	44.75	18.25
OTC	Dell	DELL	22.75	28.81	6.06	26.65	-	0.00	0.00	32.75	13.50
NYS	Hewlett-Packard	HWP	78.75	79.00	0.25	0.32	15	1.20	1.52	93.63	64.38
NYS	IBM (H)	IBM	57.13	63.63	6.50	11.38	-	1.00	1.57	64.13	40.63
NYS	Silicon Graphics	SGI	24.25	22.88	-1.38	-5.67	27	0.00	0.00	26.88	16.00
OTC	Sun Microsystems (L)	SUNW	22.38	21.38	-1.00	-4.47	11	0.00	0.00	32.63	19.75
NYS	Xerox	XRX	98.88	101.13	2.25	2.28	-	3.00	2.97	104.88	69.88
NYS	Tandy	TAN	33.13	37.63	4.50	13.58	15	0.60	1.59	50.75	28.13
	CPU'S										
NYS	Advanced Micro Devices	AMD	26.00	26.25	0.25	0.96	10	0.00	0.00	32.75	16.75
OTC	Intel	INTC	61.69	61.38	-0.31	-0.51	11	0.24	0.39	74.50	49.25
NYS	LSI Logic (H)	LSI	22.25	23.25	1.00	4.49	19	0.00	0.00	23.63	13.00
NYS	Motorola	MOT	44.63	47.00	2.38	5.32	24	0.28	0.60	54.88	40.31
	COMMUNICATIONS										
NYS	AT&T	T	51.25	54.75	3.50	6.83	18	1.32	2.41	65.00	49.50
NYS	BellSouth Corp.	BLS	60.63	59.00	-1.63	-2.68	24	2.76	4.68	63.88	51.63
OTC	MCI	MCIC	22.88	24.31	1.44	6.29	21	0.04	0.16	29.88	21.38
NYS	Northern Telecom	NT	29.88	31.25	1.38	4.60	-	0.36	1.15	38.63	21.38
NYS	Pacific Telesis	PAC	31.88	30.38	-1.50	-4.71	27	2.16	7.11	34.50	27.66

Note: Microsoft completed a 2-for-1 stock split.

KEY: NYS = NEW YORK ASE = AMERICAN OTC = OVER THE COUNTER
(H) = NEW HIGH REACHED IN PERIOD (L) = NEW LOW REACHED IN PERIOD

MARKET DIARY:

ADVANCES	16
DECLINES	15
UNCHANGED	1
NEW HIGHS	3
NEW LOWS	4

MOST ACTIVE ISSUES:

LARGEST DOLLAR GAINER	Compaq	$ 7.25
LARGEST DOLLAR LOSER	Borland	$ -2.25
LARGEST PERCENTAGE GAINER	Dell	26.65 %
LARGEST PERCENTAGE LOSER	Borland	-18.75 %

	CLOSE 04/29/94	CLOSE 05/27/94	NET CHANGE IN PERIOD	PERCENT CHANGE IN PERIOD
MICROTIMES STOCK INDEX	4639.86	4709.29	69.43	1.50
DOW JONES INDUSTRIAL AVERAGE	3668.31	3757.14	88.83	2.42
STANDARD & POOR'S 500 INDEX	450.91	457.33	6.42	1.42
N.Y.S.E. COMPOSITE	249.13	252.79	3.66	1.47
NASDAQ COMPOSITE	731.69	733.14	1.45	0.20

CLOSING QUOTES FOR GRAPH:

DATE	MICRO TIMES	DOW JONES
10/18/93	4473.13	3642.31
12/17/93	4644.25	3751.57
01/07/94	4866.50	3820.77
02/04/94	4728.74	3871.42
03/04/94	5081.75	3832.30
04/05/94	4878.26	3675.41
04/29/94	4639.86	3668.31
05/27/94	4709.29	3757.14

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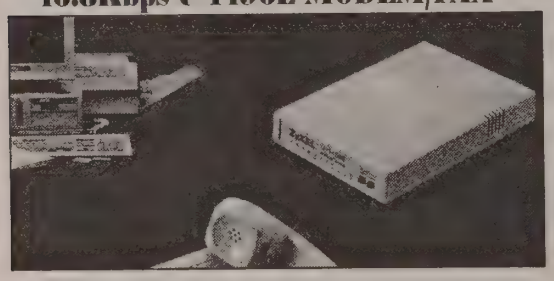

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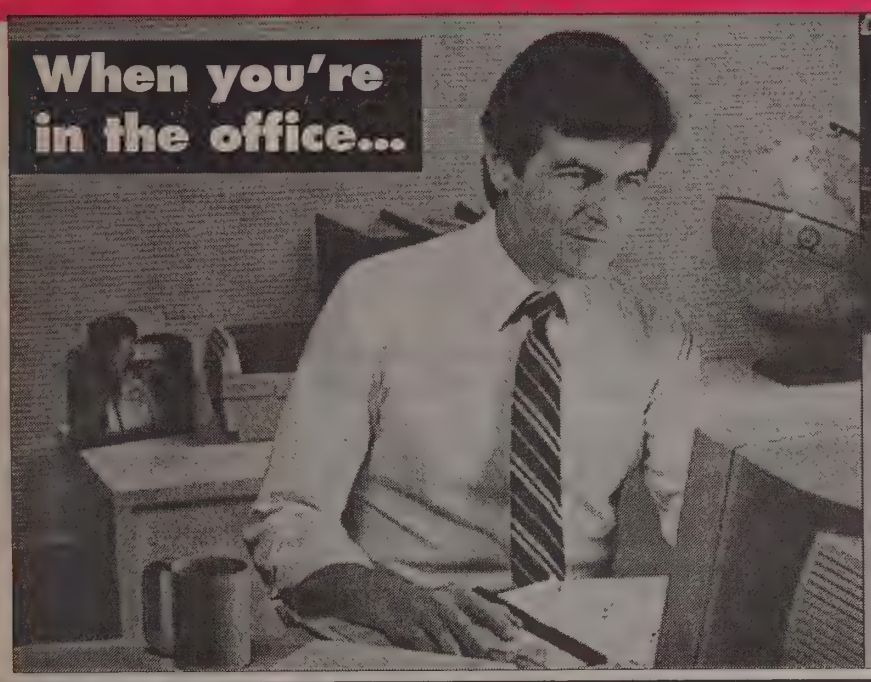

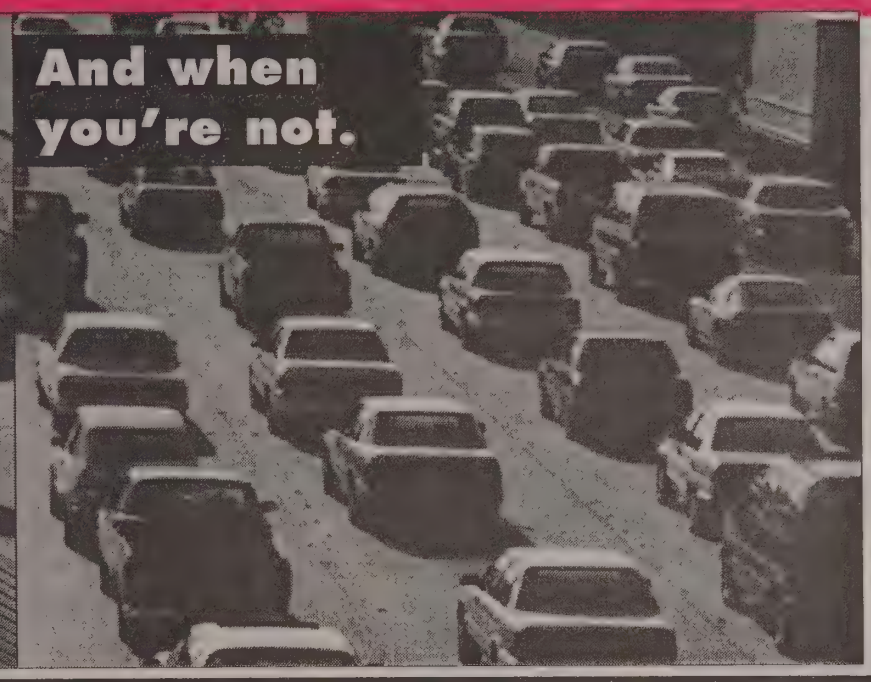

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BOARDWATCH MAGAZINE — November 1992 — ZyXEL U-1496, ZyXEL U-1496E

Winter 1992 — ZyXEL U-1496 Awarded 5 NeXTWORLD Cubes

MacUser 200 — June 1993 — ZyXEL U-1496E

NETWORK WORLD — May 10, 1993 — ZyXEL U-1496E

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PC Digest Ratings Report — May 1993 — ZyXEL U-1496, ZyXEL U-1496E

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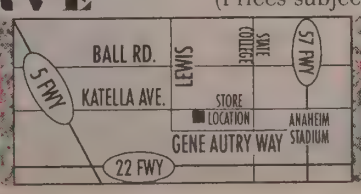

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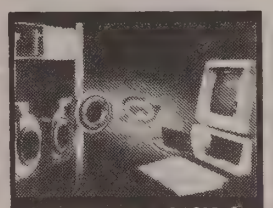
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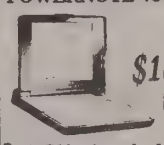
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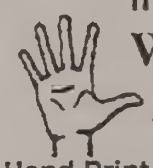

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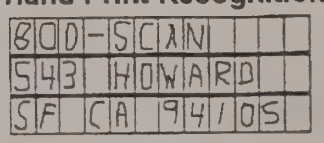

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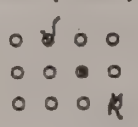

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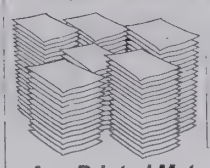

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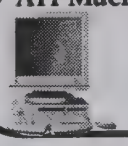

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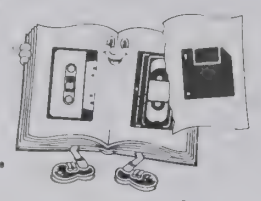

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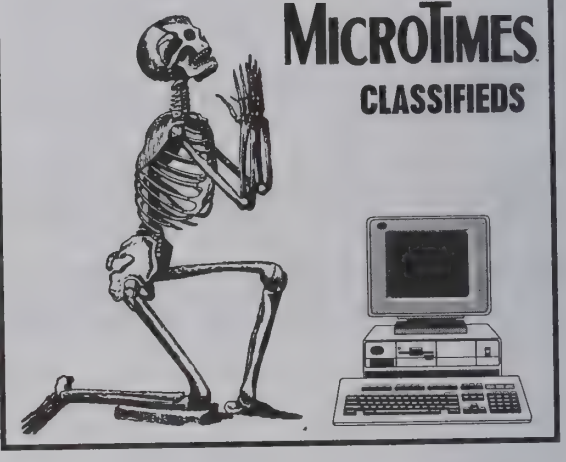

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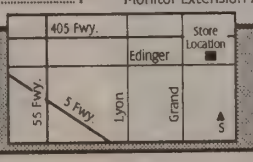

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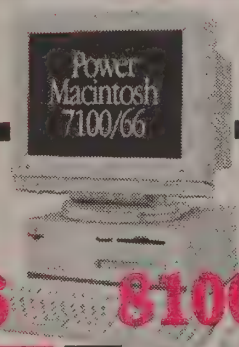

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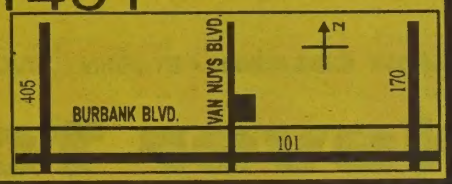

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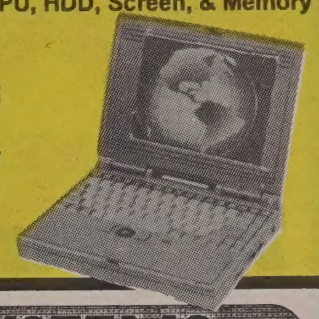

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How The Computer Business Affects Us All

It's not often that I go to my friend Harry Drabin's Mystic Temple in Los Angeles. I last went over a year ago, and the visit had worldwide ramifications, the true cause of which has never before been revealed.

It all started when the famed Bay Area channeler Ajax One (aka David Edward Lake) was going to reveal truths about computer marketing. I was about to do my monthly *MicroTimes* column and thought this would be a great angle. (As it turned out, I've been saving the story in the computer ever since, fearing the consequences of making it public.)

The Return Of Tom Watson

Ajax One is amazing. Under a trance he can channel thirty or forty different people—both alive and dead—with whom he's made contact in the last few years. His predictive capability is phenomenal and many corporations use him religiously when they are in a pinch.

The air was ripe with pollution. Inside the temple was a pond; on the pond was a boat, in which we sat in a semi-circle. Ajax One sat in the lotus position on a painted orange crate before us with his eyes closed and his palms up.

Within a few minutes he started to quiver and twitch. Suddenly his mouth opened and a weird deep voice intoned: "I'm Tom Watson Senior! I'm here to reveal the ultimate truth. You may ask me any questions."

A woman from Motorola who asked me not to use her name spoke first. "Do you believe the PowerPC will overtake the Pentium in sales and acceptance?"

Ajax open his eyes and glared at her. "What is and will be has confluence in the collective unconscious and the truth is the only true mark of the wise. Look within yourself, the answer is there. It's where it has always been."

The entire audience, mostly New Age wackos, said, "Wow! Heavy!"

I figured I was missing something. I spoke up: "Is that a yes or a no?" The audience groaned as if I was some sort of rube.

Watson rose. "I'll tell you young punks what's wrong with IBM. That's what you want to know. That's what you want to ask, right? Well, the company is run by a bunch of wimps! In my day it was run by weasels and we kicked butt. It sickens me to see that scrawny Gill Bates at Microsoft...

"Bill Gates. His name is Gates."

"*Whatever!* It sickens me to see that bastard take our business away. We used to follow around salespeople and underbid them. We could cut them off, ruin their business. Now we're begging for work. It makes me want to puke! All the time Bates is laughing at us and we don't even care to respond... Where's Frank Cary when we need him?"

The Disharmonic Convergence

A moderator, standing next to Ajax One, held her hand up. "We will now begin the convergence process."

I turned to the PR woman sitting next to me and asked what *that* meant. She shrugged her shoulders. The guy next to me nudged me and whispered. "It means we're going to become Tom Watson, Sr. on the third cosmic plane. That's unless he changes to someone else before the process is complete."

The PR woman overheard this guy and said, "Neat!"

The moderator waved her hand slowly in front of her face. "Join hands, please."

The PR woman and the guy on my right grabbed my hands before I could get up and leave. As if by some cosmic coincidence the boat started rocking as Ajax jumped to his feet and screamed, "*Now!*"

Two enormous lightning bolts shot out of him, one from each hand, and struck the people at the ends of the human chain. The electricity shot through each of us and made everyone's hair go straight up. Everyone screamed, let go of each other, and blew on their hands, which were now smoking!

> **The channeler shook his head. "It's peculiar, but when I channel a company founder like that it releases some sort of pent-up hostility into the audience. It's as though the aggressive aspect of the person, living or dead, comes out in these sessions. The faster growing and the more aggressive the company, the worse it gets."**

I looked around. Everyone had a mean smirk on their faces. I felt mean. Suddenly, without any provocation, a huge fight broke out, with everyone punching and kicking and throwing things at each other. Some big fat guy I didn't know swung at me and hit the PR woman straight in the face. She jumped up with a sneer and jumped on the fat man's back and scratched at his eyes. An executive from Intel slammed a large overstuffed chair into the woman, shattering the chair and sending her to the floor.

The whole boat was now rocking as the fight continued. The channeler, meanwhile, had awoken and panicked at what he saw. He whispered something to his assistant, the two of them joined hands, and within a few seconds a large fireball emerged from between them and exploded into fragments. Pieces of it hit everyone in the room, returning us all into normal people.

"What the heck happened?" I asked.

The channeler shook his head. "It's peculiar, but when I channel a company founder like that it releases some sort of pent-up hostility into the audience. It's as though the aggressive aspect of the person, living or dead, comes out in these sessions. The faster growing and the more aggressive the company, the worse it gets."

"You can do living or dead people?"

"Yes, I often tap into the unconscious of the living and get advice they do not know they even are giving. There's no difference when you're on the super plane of the great unknown."

The coordinator spoke. "Ajax will demonstrate this ability for you by channeling a living person: Bill Gates."

We all looked around at how badly beaten we all were and everyone immediately ran out of the place as fast as we could.

And that, ladies and gentlemen, was the real beginning of the LA riots—no matter what they tell you on TV. ■

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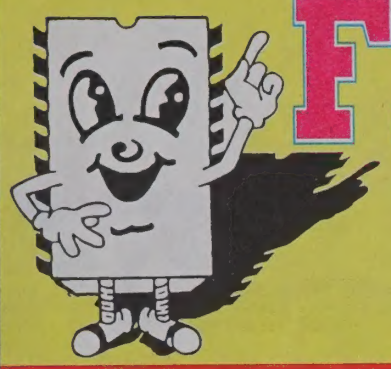

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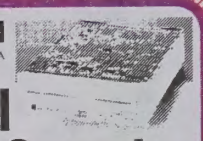

Photo CD Capability - Mulitsession • 256K Data Buffer • Transfer Rate: 300 K/sec (Double Speed Sustained) • Average Access Time: 280 ms • Interface: SCSI-2 (50 Pin Connector)CDS 535
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2400 BAUD INTERNAL MODEM

- Easy installation and operation
- Hayes compatible command sets
- Full or half duplex operation
- PC-Bus (IBM compatible)
- Asynchronous operation

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HEWLETT PACKARD Authorized Dealer HP 4 PLUS

The BEST print quality in the industry
- 12 pages per minute • 600dpi resolution
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- Duplex option (sold separately)

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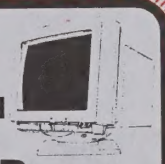
1024 X 768 .28mm DOT PITCH NON-INTERLACED 15" SUPER VGA MONITOR



1024 X 768 • .28 Dot Pitch • Non Interlaced
IS1528N5
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$329.95

CHECK-IT SET-UP ADVISOR

Save Hours of Frustration

- Simplify Installation Procedures
- Spot Existing Configuration Problems
- Avoid Setup Conflicts with Upgrades
- Make Sure You Purchase a Compatible Device
- Look up Manufacturer's Setup Recommendations.

TouchStone Software Corporation

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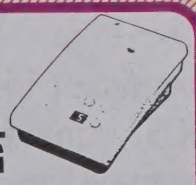
$21.95

AT&T ALL DIGITAL ANSWERING MACHINE



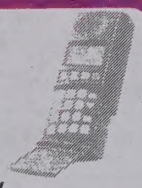
This AT&T answering system utilizes tapeless digital technology to ensure consistent recording quality over the life of the system. The convenience of new message playback, outgoing message bypass, remote system turn on or off and remote message recording makes this an excellent value at only...

$69.95

MODEL 1710
#1853906

GENERAL ELECTRIC CELLULAR FLIP PHONE

GE. We bring good things to life.



WITH 100 NUMBER ALPHANUMERIC MEMORY

Everyone has flipped for flip phones, and this GE Pocketfone is one of the reasons why! With its 100 Number Alphanumeric Memory (names and numbers can be stored together and scanned alphabetically), Menu Scroll, Dual NAM, 8 Level Call Restrictions, Last Number Redial, Lighted Keypad, Auto Scratchpad, Mute, Low Battery Warning, Speed Dialing, Call Mailbox, 90 Minute Talk Time Battery, Overnight Charger, and much more! Refurbished to work like new at only...

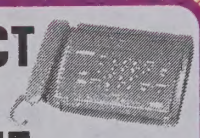
L.A. CELLULAR

$99.99*

MODEL CT-400R**
#1906411

*After $25 Instant Activation Rebate. Price w/o Activation is $124**.

COMPACT FAX MACHINE



This unbelievable value comes equipped with a telephone answering machine interface, 10 number speed dialing, last number memory, polling, on-hook dialing, and remote operation (extension phone transfer to fax) all for only...

Limit One per Family.
No Sales to Dealers or Resellers.

$189.99

#1820524

BELL Phones BY NORTHWESTERN BELL PHONES A U S WEST COMPANY 60 CHANNEL 900MHz CORDLESS PHONE

This incredible value from Northwestern Bell comes equipped with 60 channel selection, lighted keypad, 10 number memory, last number redial, flash, handset volume adjustment, intercom, page, and much more, all for only....

$199.99

MODEL Ex-3900
#1908114

**Service Activation not Required. Limit One per Customer. No Sales to Dealers or Resellers.

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Fry's ELECTRONICS

Prices good through July 5, 1994

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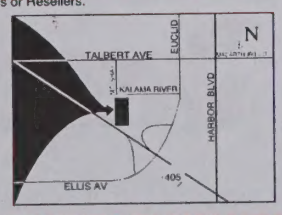

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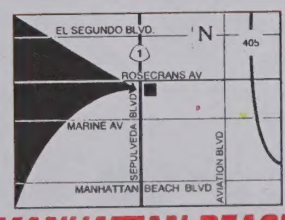

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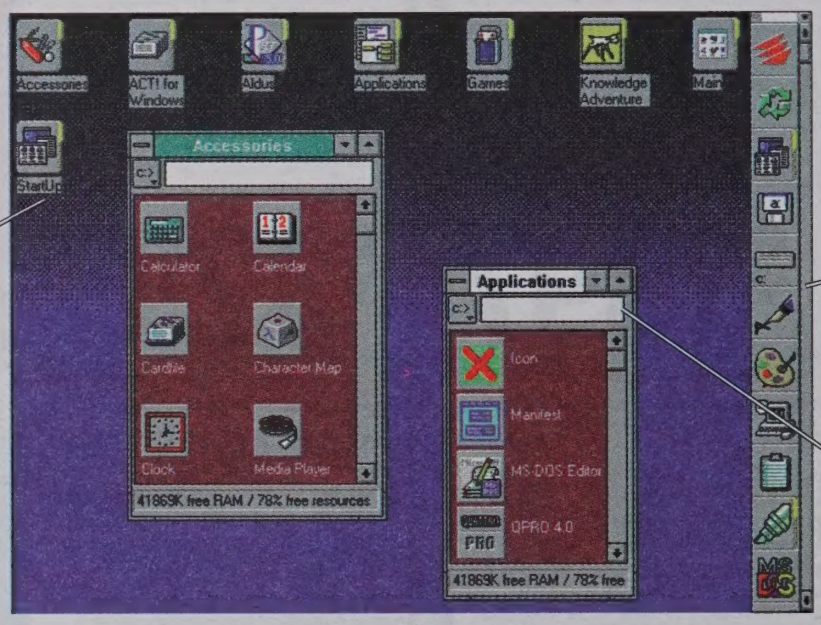
WONK

SideBar Wonks Your Windows to Perfection

SideBar eliminates the last bit of DOS clunkiness from MS Windows.

Object-oriented interface makes it easier to manage files, disk drives and printers.

Simply drag and drop files to copy, move or print them.



Now opening, copying, moving, deleting, renaming and printing are intuitive.

Speed up the way you work by customizing SideBar to conserve desktop space.

Sometimes prefer to key-in DOS commands? The command line's always there.

SideBar is the efficient desktop for Windows—a small, fast shell that automatically creates objects that make it simpler to manage applications, documents, folders, drives, TSRs, printers, etc. All you need to do is point and click.

SideBar simply makes Windows more 'windows-like.' And that makes your work go quicker and easier. It's an idea incorporated in Microsoft Office, but we've taken it to its obvious conclusion.

SideBar makes MS Windows a better place to work.

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